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Depreciation Accounting in Utilities
CARL THOMAS DEVINE

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# CONTRIBUTORS TO THE JANUARY ISSUE

CARL THOMAS DEVINE (*Depreciation Accounting in Utilities*) is an Associate in Business Economics at Johns Hopkins University.

MAURICE E. PELOUBET (*Observations on Cost*) is a member of the firm of Peloubet, Hodgson, and Peloubet.

CLEM C. LINNENBERG, JR. (*Policies & Procedures in Federal Civilian Procurement*) is an economist in the Federal Bureau of the Budget.

CHARLES W. LAMDEN (*The place of Accounting in Price Control*) is a business economist in the Office of Price Administration, Washington. He is a graduate of the University of California.

A. HENRY LUDMER (*German Financial Mobilization* is at present professor of economics and accounting at Wentworth Military Academy. Dr. Ludmer was a professor at Prague, Czechoslovakia, until the closing of Czech universities and was subsequently interned in an Italian concentration camp. He has been in the United States two years.

L. W. COLEMAN, JR. (*The Use of Determinants in the Solution of Linear Equations*) is an employee of The Dallas Gas Company and a Texas certified public accountant.

EARL CLEVENGER (*Presenting the Theory of Debit and Credit*) is head of the Commerce Department of Central State College, Edmond, Oklahoma.

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# DEPRECIATION ACCOUNTING IN UTILITIES[1]

Carl Thomas Devine

Although Preinreich and others have again and again pointed out the effects of various depreciation methods on periodic reports and, in the case of public utilities, the effects on desired receipts and possibly on rates throughout the life of the enterprise, accountants and authorities interested in the utility problem have been slow to recognize the implications of retirement and traditional depreciation procedures.[2] In view of the recommendations of the Bureau of Internal Revenue, the Federal Power Commission, the National Association of Railroad and Utilities Commissioners, and various state regulatory bodies, which call for a shift from the retirement reserve method to "depreciation" accounting, a reexamination of the consequences of using retirement policies and depreciation methods with some reference to the effects of making the change seems desirable. This discussion attempts to trace the effects of these procedures on both consumers and owners. In this paper ethical decisions as to the methods which ought to be followed are, as far as practical, avoided. Nevertheless, readers may detect a questioning reaction to the extreme dogmatism of those advocating the change.

A systematic unraveling of consequences arising from the use of various proposals requires several simplifying assumptions. The extremely rigid assumptions, used throughout the first section of this paper and relaxed in the second, may be summarized: (1) the rate base coincides with the accountant's book figures regardless of the depreciation method pursued, (2) changes in output arising from the efforts of concerns to obtain the prescribed maximum return with the various policies are neglected; variations in return are taken in the rate structure, which is assumed to be flexible, and (3) except for specialized topics, demand is supposed to be sufficient to cover operating charges (regardless of the depreciation method selected) and to provide the maximum return.

In ordinary commercial accounting, with its current emphasis on the determination of periodic income, the fundamental de-

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[1] Sincere appreciation is due my former colleagues, Professor A. P. Lerner and H. G. Hilkin, who have pointed out many implications which otherwise would have been overlooked.

[2] No doubt the lack of recognition is due in part to the mathematical character of the expositions. For a nontechnical explanation consult Gabriel S. D. Preinreich, "The Principles of Public-Utility Depreciation," The Accounting Review, June, 1938, pp. 149–165. See also, by the same writer, "Annual Survey of Economic Theory: The Theory of Depreciation," *Econometrica*, July, 1938, pp. 219–241, and "The Practice of Depreciation," *Econometrica*, July, 1939, pp. 235–265.

Preinreich has also shown the periodic charges arising from the use of each method. His calculations, though for a specific case, show the effects of diminishing charges, straight-line, and annuity method at a force equal to the prescribed maximum return. The effects of the crude retirement method unmodified by an equalization reserve are also shown. Further interest is added to his charts by the reflection of increased replacement costs and increased capacity. "Principles of Public-Utility Depreciation," *loc. cit.*, p. 154. Also see Edwin B. Kurtz, *The Science of Valuation and Depreciation* (New York, The Ronald Press Company, 1937).

preciation problem is taken as the allocation of a sunk cost to the operations of the various periods receiving benefits from the facilities whose acquisition make the costs necessary desirable. Assuming profitable operations, the accountant's procedure with the aid of present legal regulations should restrict funds over the life of an asset equal to the original cost of the property. This accounting procedure is an attempt to report reasonable periodic earning figures which are compatible with a definition of income, which, if operations warrant, provides for keeping the original dollar capital intact. Such a conception of income, though it neglects the fact that the typical investor is interested more in keeping the earning power unimpaired than in maintaining the invested dollar capital, is certainly acceptable as a practical approach. However, definite problems have arisen regarding administration and disposition of recovered funds *represented* by depreciation allowances. Managers have been reluctant to label properly and to return this part of "recovered capital" to the owners. In part this reluctance may be traced to erroneous impressions about plant replacements.

For a continuing enterprise having properties, the bulk of which must be replaced at one time, there is little doubt that funds roughly equivalent in amount to the recovered funds impounded by depreciation charges may be necessary for replacement. Nevertheless, as has been emphasized many times, replacement for a concern which continues indefinitely is done piecemeal and at no time in the future will all of the recovered funds represented by depreciation reserves on diversified properties be necessary for maintaining the same volume of output. A large volume of funds ~~are~~ is, therefore, accumulated which ~~are~~ is not only unnecessary in the intervals between individual replacements but ~~are~~ is, in fact, never required by the firm unless it wishes to expand its productive capacity.[3] Public utilities are unquestionably of this type.

## I

In its crudest form, the retirement procedure charges the cost of specific units of equipment and plant to operations of the period in which the units are retired. No depreciation expense is recognized until this point. Since the periodic retirement of similar fixed assets, placed in operation at the same time, may be expected to follow roughly a normal curve and since the types of equipment with varying life estimates cannot be expected to have a compensatory effect, an irregular stream of period retirements may be anticipated.[4] Retirements during the early years of operation should be small and consequently charges for depreciation made against these periods

[3] It is sometimes argued that in times of less than full employment, the enterprise, having available funds which are costless inasmuch as there are no explicit interest charges, may be tempted to invest more readily. In addition to aiding employment this policy—investing when construction costs are low—conforms to what is usually termed good "business administration." This argument is only partly true. The enterprise has no explicit interest charges but the capital used for investment has an opportunity cost of the amount which could be earned on securities of other firms. The real inducement to invest, then, is the freedom from incurring fixed charges in order to raise the capital. There would be of course some inducement if the return on investment securities were considerably less than the market rate at which the concern must borrow. Owners also have an opportunity cost and might invest elsewhere or consume more at the lower costs which ordinarily prevail in times of unemployment if the funds were returned to them. In general, however, security owners are likely to have low propensities to consume and since investments are not especially profitable, these funds in the hands of owners may do little to increase the level of activity.

Some indication of the prevalence and importance of funds represented by reserves in practice may be found in the testimony given in the T.N.E.C. Hearings on its Investigation of Concentration of Economic Power, Part 9, *Savings and Investment* (Washington, United States Government Printing Office, 1940). Stuart Chase summarizes and discusses some of this testimony in "Capital Not Wanted," *Harper's Magazine*, February, 1940, pp. 225–234. The traditional accountant's attitude is expressed by George O. May, "The Relation of Depreciation Provisions to Replacement," *The Journal of Accountancy*, May, 1940, pp. 341–347.

[4] Kurtz has collected some interesting information on this subject, *op. cit.*, esp. Ch. 5 and Appendix.

may be expected to be small. During intermediate periods retirements should be extremely heavy, but in the distant future a diversified plant should be replaced with some regularity. To offset this irregularity, a commonly used modification—the distribution or retirement reserve—is often introduced. Through the use of this technique, the early periods may be burdened with some additional depreciation and a reserve accumulated sufficient to smooth the charges of heavy later replacements. This reserve serves not only to smooth the depreciation charges but also serves to restrict indirectly sufficient funds to meet the drain on working capital for later requirements. It should be observed that it is not the purpose of this method to restrict funds to the entire amount of the original investment.[5] The amount of this type of reserve increases during the early periods and should be practically absorbed during the intermediate years of heavy replacements.[6]

With regard to public utilities one of the fundamental problems is the determination of the rate base. Except for considerations of working capital we shall assume that the rate base coincides with the accountants' book values. A minimum level of working capital is necessary and generally allowable. Though this minimum is usually assumed to be constant, it is clear that a large part of the variability in this item is related directly to expected replacements in the immediate future. To include these funds for immediate replacement in the rate base and to neglect earnings which may result from their temporary investment is to charge customers a return on them before the producing equipment is secured. Unless the earnings from the resulting short-term investment are included in the operating return or unless these funds are excluded from the rate base, the owners would be permitted a dual return, and from their viewpoint it would be desirable to accumulate large balances. In the event that the payments by consumers on these funds are less than the costs of raising capital when necessary, consumers would be better off for the inclusion.

Suppose now that a firm, enjoying sufficient demand and expecting continuing operations, induces the authorities to recognize the unmodified original plant cost as an acceptable rate base. With this and previous suppositions, the capital value of the ***enterprise*** is the discounted value of the amounts which ***authorities permit the owners to extract from consumers*** plus consideration of the windup value, if any.[7] Since the value of the concern is thus separated from the condition of its physical assets and since it is assumed that demand is sufficient to cover replacements and the maximum return, a utility with a used plant is "worth" as much ***to the owners*** as one having new facilities.[8] It is ***not*** "worth" as much to the consumers.

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[5] "Such a reserve did not, except by accident, measure the exhausted or consumed service value of the entire plant. It was largely a cushion or buffer to ease the strain of accounting for retirements of plant items." *Twentieth Annual Report of the Federal Power Commission*, 1940 (Washington, United States Government Printing Office, 1941), p. 57.

[6] Guthmann apparently does not agree with this point. In comparing gas and electric utilities, which use retirement reserves, he states: "Since the gas companies typically accrued less for depreciation, the higher reserves suggest properties of greater average age." "Public Utility Depreciation Practice," *Harvard Business Review*, Winter, 1942, p. 220. Inasmuch as both types used the retirement-reserve technique, the evidence cannot indicate definitely the relative average ages of plant and equipment.

[7] For an excellent discussion of utility valuation and the absurd arguments which have been made regarding the fair-return, fair-value doctrine, see Robert L. Hale, "Does the Ghost of Smyth v. Ames Still Walk?", *Harvard Law Review*, May, 1942, p. 1116 ff.

[8] To reason in these situations that the capital "value" of specific machines is dependent on the future services to be received by the entire enterprise is clearly dangerous. Preinreich appears to dismiss too readily the retirement method by such reasoning: "Under the retirement method the book value . . . of the plant always equals its original cost, since this method is based on the fallacious claim that a machine which serves as well as when it was new, can not be worth less than it cost. The

It is not the purpose of this paper to defend the retirement method, but it should be observed that in this particular area the arguments commonly advanced against its use are not appropriate. To buy a single machine, residual values and interest neglected, requires approximately twice as much *dollar investment* by the purchaser as the acquisition of a "seasoned" one with roughly one-half of its services remaining. The "single machine" valuation process may be carried over, with but slight modification, to the purchase of a going commercial enterprise, since the cost of repairs and replacements results in a revenue deduction for calculating operating net to owners. For a utility with demand insufficient to yield the maximum return, this reasoning is also applicable. However, where the utility has sufficient demand so that the legal limit is at all times operative, such a method is clearly unsatisfactory, and the discounted expected return based on the commission's authorization and the firm's ability to extract revenues to the prescribed maximum becomes effective. Where depreciation is viewed as a decrease in "value" the enterprise from an individualistic viewpoint clearly "suffers no depreciation." While there is utter confusion between "enterprise valuation" and "cost allocation,"[9] it is not at all clear, as will be pointed out later, that depreciation methods result in more useful reports.

Let us now review the effects of using the retirement and other types of depreciation accounting in light of the preceding assumptions. It is necessary to investigate the effects on owners and on consumers as a whole and also to examine the consequences for successive owners and consumers.

In terms of dollars collected, the owners of a long-lived enterprise may extract more total revenues from all consumers when the retirement method is in effect. Clearly, however, it is unreasonable to neglect the opportunity of investing the recovered depreciation funds elsewhere when considering the position of the owners under the various proposals. Assuming that a long-continuing enterprise is able to invest its recovered plant funds at the same rate of return, the concern is just as well off if depreciation methods are used. Using straightline, for example, each year consumers return funds amounting to $C-R/N$ (where $C$=cost, $R$=residual value, and $N$=number of periods), and the rate base each year is reduced by an equivalent amount. When these funds can be invested without lag to yield the same return, the total income to the firm (and ordinarily to the owners) is identical with the total income when the retirement approach is used. Except for modifications discussed below it is a matter of indifference to the owners of the concern which depreciation procedure is followed. Nevertheless, in practice, owners will often prefer the periodic depreciation approach, since with this method they may get a more diversified investment with higher probable liquidation values for the assets, and in case of short-lived operations the total return is more satisfactory. Counterbalancing these arguments is the possibility that the firm cannot or will not earn an equal rate of return on the additional funds.[10] (Other considerations affecting the relative desirability of the two approaches are discussed Section II.) Furthermore, with the pre-

three other methods recognize that value depends not only upon the future present service, but also upon the future period, during which it will be maintained." "Principles of Public Utility Depreciation," *loc. cit.*, p. 151. The "future period" for a utility using retirement methods extends as long as the commission doesn't change its attitude and as long as demand holds out.

[9] Paton stresses this point. See *Advanced Accounting* (New York, The Macmillan Company, 1941), p. 307.

[10] In general there seems to be a feeling that these funds are less profitable. See, for example, Federal Power Commission et al. v. Natural Gas Pipeline Co. of America et al., 62 Sup. Ct. 736 (U. S. 1942).

vious assumptions and except for the reservations outlined above, there is no group of owners who are better off than groups of other periods. Even the change from retirement to other methods is a matter of little importance to the owners as long as these reservations are appropriate and the concern is allowed to build up the depreciation reserves.

How do customers fare under the two general methods? Again, the total dollars extracted over a long period from the consumers of this concern's product are greater when the retirement methods are used. (On the other hand, a short-lived concern whose demand while it operates, is large may expect to collect more receipts from its consumers when depreciation procedures are used.) However, for an infinitely existing firm operating with the above assumptions the *discounted value* (with the discount rate equal to the rate of return) of total payments made by all consumers should be the same no matter which accounting method is followed. With depreciation methods, early consumers not only pay a return on a declining base which begins at the original cost, but also return approximately one-half (less when residual values are involved) of the original cost in the interval necessary for the plant to become "seasoned." Thus, the *total cost* to all customers under depreciation methods includes interest which they could have earned elsewhere on the funds returned to the owners, the discounted amount of which should be roughly equal to the discounted value of additional future payments to make up the return on the higher rate base resulting from the use of retirement methods.

A group of consumers, considered as individuals, is interested, not in the discounted value of total payments by all consumers, but in the amount and time of the payments they individually are expected to contribute. Early consumers may expect to pay more when depreciation methods are used. Customers of the intermediate period contribute more heavily when the unmodified retirement procedure is used because replacements (taken to expense and borne by consumers) are heavy during this interval and a return on a higher base is to be covered. In the distant future, consumers are better off under the depreciation methods since the depreciation taken with both methods should be approximately equal during this interval and since the return to the owners from these consumers is less with depreciation techniques. (Changes in plant capacity and replacement costs are neglected in the above argument.) A further unfavorable characteristic of the unmodified retirement method is that the amounts taken from consumers period by period are highly variable, but the retirement reserve aids in the correction of this irregularity. When liquidation becomes imminent but demand is still strong, there should be no need for extensive replacements and the final consumers should prefer the retirement approach. Nevertheless, with this demand condition, owners might be tempted to make heavy commitments in the later years for replacements which can be charged to the customers and after liquidation used in other connections. Perhaps in the typical situation demand, at this time, is so inadequate that the limit on return is not operative in either case, and owners, uninfluenced by accounting procedures, will extract what they can from users.

It is now possible to make a limited examination of the effects of a wide shift from retirement depreciation to straight-line and related schemes. To make such a change retroactively (without permitting the concern to recover the reserves it could have recovered) doubtless would mean that many companies would reflect deficits in their immediate accounting reports. From the accounting point of view, a

change in the definition of net income is implied, and this change requires a transfer of earned surplus (as calculated by previous definitions and modified by dividend action) to the depreciation allowances. If there is insufficient surplus for the transfer, it is clear that the consumers have not yielded enough revenues to accumulate the reserves, which represent roughly the "capital" consumption at cost, and to justify past dividends.

The position of both owners and consumers is, of course, dependent on whether authorities permit the deficiencies to be made up from future customers. If owners are not given this privilege, they are clearly worse off than if they were permitted to continue retirement policies or if they had started depreciation accounting from the beginning. Their rate base is low, and the "capital consumption"—by depreciation standards—cannot be regained. Even if owners are allowed to levy heavier charges against future consumers, immediate prospects for dividends are not bright and the jolt of suddenly finding a deficit where a confortable surplus recently flourished is likely to have a strong psychological effect on prospective and current investors. Except for this somewhat intangible psychological factor owners are, of course, no worse off after the change provided they are permitted to recover the amount of the write-off from subsequent owners.

Consumers, unless they must make up the deficiency over the life of the enterprise, receive the services for less total cost.[11] An estimate of the most probable changes in consumer rate expectations with this somewhat unreasonable assumption depends on the maturity of the plant. Consumers expecting to use the services only in the immediate future may or may not be better off. If the utility plant is already seasoned, payments should be somewhat lower due to the lower rate base, and if, at the time of change, the enterprise is in a period of heavy replacements, immediate payments would be further reduced for this reason. Only in the early period of operations would rates be drastically increased, for in this case an increase may be expected in order to build up some reserves (and funds) from current and future operations. It should be noticed that where retirement equalization reserves were used instead of the unmodified retirement method, the change to depreciation methods should increase actual payments in the immediate future regardless of the stage of maturity.

If (with more realism) consumers are expected to make up the deficit, the consequences are somewhat different. With the given assumption, stockholders should be neither better nor worse off by the shift. Consumers should expect an immediate increase in rates unless the enterprise is not using a retirement reserve and happens to be in the interval of heavy replacements. This increase is due not only to building up of current reserves but also to the desire to make up reserves which would have been recovered earlier had the depreciation methods been applied from the beginning. The speed with which these reserves are built up is obviously an important factor to individual customers. The Federal Power Commission apparently expects a considerable period to elapse before "adequate" reserves can be accumulated. It states: "because of the change from 'retirement reserve' accounting to 'depreciation' accounting the Commission did not expect that adequate reserves would be set up at once. It is assured, however, that in a very brief period proper depreciation expense would be recorded."[12]

[11] Guthmann points out that if owners are not allowed to recover receipts equal to the amount of deficient reserves, we have in fact a "capital levy" on investors for the benefit of consumers. *Op. cit.*, p. 222.

[12] Twentieth Annual Report, *op. cit.*, p. 57.

## II

The foregoing simplifying assumptions are clearly too rigid and must be relaxed before conclusions can be applied appropriately to any except extremely rare utility cases. It is now important to examine some modifications which are necessary when these suppositions are made more realistic.

Suppose that demand is not sufficient, at all time, to cover peak charges and to provide the prescribed maximum return but assume that it is reasonably constant and adequate to meet ordinary charges. With depreciation accounting requirements for the full return are more likely to exceed the receipts in early periods, whereas the charges under the unmodified retirement method are more likely to exceed the receipts during the interval of heavy replacements. Where an equalization reserve is used in connection with the retirement method, "depreciation" charges plus the maximum return on the same base are roughly constant.[13] Where the constant demand is adequate to provide only for the requirements of the retirement-reserve method, owners would wish to use this method unless they are allowed to capitalize, income (according to the definition implicit in depreciation methods) which they did not make. Owners using straight-line and related methods are no doubt active in the insistence that developmental losses and unearned profits be capitalized, since with a constant or rising demand this procedure is preferable from their viewpoint. Depreciation methods, neglecting expansion and rising replacement costs, do not permit the owners to take advantage of higher future demand as effectively as retirement-reserve accounting.

The much discussed problem of "going value" is a situation rising from inadequacy of early demand. It should be clear that owners are practically indifferent to whether they recover the developmental costs at once or are allowed to earn a return on them. The agitation to have them capitalized is of course due to the fear that early period demand will not cover the items and the owners may never be able to recover them. For comparability when the early demand is sufficient to cover all costs and to provide the maximum return with retirement methods (but insufficient for both with depreciation methods), owners whose firms use depreciation techniques should wish to have capitalized not only early losses (unrecovered costs) but also profits which they do not make. Otherwise they would have been better off by the adoption of the retirement approach. The commissions may allow the recovery of early losses in either of two ways: by approving the capitalization of these charges or by increasing the prescribed rate of return. If the latter alternative is used, for the situation outlined above, retirement methods still are clearly more desirable to the owners, as the base, which also limits the return, is above the base with depreciation methods.

Perhaps the most realistic assumption with regard to demand is that it will fluctuate somewhat with the cycle and show a pronounced upward long-run trend. If owners, with these conditions, are able to stagger retirements over the cycle (any some freedom in this direction is certainly available), they may desire the cruder form of the retirement method. With this procedure they should be able to utilize better

[13] The increasing charge procedures (the various interest methods) have a marked advantage over other depreciation methods in this regard. Where the earning rate is used in the discounting process the increase in depreciation charges should be offset exactly by the decrease in the amount required of customers to meet the maximum earnings. The result is, of course, a constant total for depreciation plus desired earnings, even though "reserves" are built up from early customers. If the rate base is modified by the amount of the retirement reserve, an interest method of distribution, seems desirable—at least, if equal periodic extractions from customers for similar services as an equitable principle is not denied.

the peak period demand by huge retirements and still be no worse off during poor periods. On the other hand, if abandonment losses are permitted against periodic earnings, owners with depreciation methods could use chronically low depreciation rates and take these losses in good years.

It is entirely improbable that regulatory commissions will, in all cases, be governed in setting rate bases by the accountants' carrying figures for plant. This assumption is therefore in need of modification. Replacement costs are one of many considerations which have been at one time or another influential in this regard. Where concerns are allowed to take depreciation expense as a percentage of replacement cost, the depreciation methods are clearly at an early advantage. During periods of high costs, larger depreciation charges may be taken, and ordinarily these periods show a strong demand for service; larger amounts may be extracted from consumers. During poor years, when calculations on original cost may reflect a profit well below the desired maximum, depreciation charges are smaller and the maximum is easier to attain with the use of replacement costs. Assuming that cyclical costs average near the original cost, greater total returns are available to the owners. It is, of course, obvious that owners stand to make a speculative loss or gain when average replacement cost does not coincide with the historical commitments.

With respect to replacement costs the influence of a shifting rate-base must also be considered. Suppose, first, that authorities (with more flexibility than reasonably can be assumed) permit the depreciated replacement cost—sound value—as the base for maximum calculation. The effect would be to permit a higher maximum return when times are good and a lower return when times are poor. Larger amounts will be taken from consumers during prosperity phases and smaller amounts at other times. Where demand conditions are such that in prosperous times more than the maximum (with original cost as the base) can be earned but in depression intervals the maximum cannot be obtained, owners stand to be better off due to this effect. Owners with retirement methods ordinarily lose with respect to depreciation methods when book values are modified by replacement costs for rate basing purposes. A given per cent change clearly affects the "straightline" *base* less, but the amount of expense which is taken with depreciation methods would vary more widely during the early periods. Inasmuch as the influence of the charge is greater than that of the base, depreciation methods should be able to utilize fluctuating demand to better advantage during these periods. Except in the early periods better utilization could be made by the retirement-reserve setup, since the depreciation charges are roughly equal but the base is affected more.

For a realistic approach the assumption of extremely flexible rate structures must be modified. Inasmuch as rates in the short-run are rather inflexible, owners should prefer a method which requires proceeds which varies with demand conditions. Clearly the unmodified retirement method is undesirable in this respect as retirements are quite irregular and cannot be expected to adapt well to cyclical shifts in demand. Straightline, neglecting changes in output and expansion, would require a decreasing rate for some time. The retirement-reserve approach and the annuity method with a discount rate equal to the rate of return seem to apply best when rates are inflexible and demand is fairly stable.

The assumption of constant output, or rather the implied neglect of output consequences, is likewise extremely rigid, but a careful tracing of these changes leads to hypotheses regarding the various demand

schedules, marginal cost characteristics, capacities of existing facilities, etc. The comments following are meant to be only suggestive. It is reasonable to assume that new firms expect increased demand during and after the developmental period. If early operating "losses" are not permitted a capitalized status, depreciation policies would make it desirable for owners to begin operations with plants, which from the long-run point of view, are less than optimum size.[14] Since depreciation is not an early important factor when retirement methods are used and since by the time heavy replacements are necessary the demand should have expanded to its expected "normal," this tendency is not important when these methods are employed. With these methods the early periods will have characteristically larger unused capacities. This probability added to the lower required receipts to meet the maximum return may well lead to experimentation with lower rates. Where the existing short-run demand schedules are elastic in these regions, the lower rates may be reduced until larger facilities are soon necessary or the demand becomes so inelastic that the marginal receipts do not cover the incremental costs. The interest method pointed out above enjoys the same advantage to a lesser extent. Owners using straightline, on the other hand, with smaller facilities and difficulty in making the desired return may be tempted to follow the apparently prevailing, but from the social viewpoint of economics often indefensible, policy of asking for higher rates.

It is interesting to observe, in conclusion, that the brilliant arguments for using "depreciation" methods and the later administrative rulings on this problem may have been supported with unwarranted fervor. While these methods seem more in accordance with our traditional ideas of "good accounting," the curious shifts in consumer charges over time which straight line and related depreciation methods bring about may be a high price to pay for the preservation of tradition.

[14] As a matter of fact, one of the most plausible defenses for capitalizing early losses and unearned profits may be constructed around the optimum size concept.

# OBSERVATIONS ON COST

MAURICE E. PELOUBET

DROWSING uneasily in a plane a few weeks ago I dropped off to sleep. I seemed to be in some sun-drenched medieval wine-growing country, a pleasant place, but my pleasure in the scene was soon marred by overhearing a dispute between the wine-growers and the bottlers.

The process of putting old wine into new bottles had been going on rapidly for the past few years. At first there had been a general idea that the new bottles were shaped a little differently from the old ones but it was assumed that their capacities were about the same.

Little by little it became apparent that the new bottles couldn't and wouldn't and weren't designed to hold all the old wine. The growers of the wine were alarmed, the bottlers were cheerful and full of reasons.

"What spills over isn't wine at all, it's just sediment and lees and it's better thrown away," the bottlers explained in a kindly way, "you are far better off without it and you will soon come to accept our measurements as showing how much wine you really have."

"But," asked the puzzled growers, "how do you know beforehand how much sedi-

ment and lees there is going to be in the wine, especially when we had clarified it and filtered it pretty carefully ourselves?"

The bottlers were in nowise abashed. "Our bottles are of the latest and most approved design. What they hold is the amount of wine you should grow. Therefore, what fills the bottle is wine, what overflows is lees, dregs and superfluity."

The growers, practically overwhelmed by now, made one more attempt:

"We rely on our best wine to pay the rent to the owners of the vineyards. These owners are patient people, not very bright and not very hopeful, but if they don't get their rent they'll starve, no one else will buy the vineyards, we can't buy them and they'll go back to pasture, all because you call wine dregs and lees."

The bottlers, with some little effort, maintained their equanimity.

"You speak as though you were to be permitted to cease making wine because you don't like the shape and capacity of our bottles. Don't you know the king has proclaimed that you grow wine, that we design bottles and that everyone should trust him and his ministers when they say everything will be all right."

The growers looked at each other glumly.

"Certainly we trust you and the king and his ministers. But the next time you intend to change the size of the bottles couldn't we give you the vineyards and join His Majesty's 13th Flying Crossbow Regiment?"

One of the leading growers turned towards me. For the first time I noticed a sturdy, cheerful, fair-haired man beside me, dressed like a medieval guild workman. The face was familiar. Yes, it was Eric Camman.

"Ho! Master Eric, you and your companion are leaders of the bottle-maker's guild. You shall judge between us. Is everything that won't go into the bottle dregs and lees?"

"What bottle?" asked Master Eric innocently. A terrific clamor arose.

"This one, the green bottle!" yelled a bottler brandishing a distorted glass vessel.

"This is the green bottle!" a grower vociferated with equal vigor, waving aloft a flexible wine skin of some leather-like substance, dyed a bright green.

Master Eric turned to me:

"Did we make those?"

"I hope not," I replied.

"Friends" began Master Eric, "I will explain everything. While we were designing. . . ."

Just at this moment I felt a gentle nudging. Was it a grower or a bottler? It was neither. The stewardess seemed to be telling me, "Please close the seat belt and strap on the window curtains. We're passing over a restricted district and we'll soon land."

I shook myself and began to wonder why, when I went to sleep thinking about the speech I must soon make about government conceptions of cost, corporate ideas on the same subject, the "Green book," the survival of industry and such things, I should have drifted into such a fantastic dream. Not having my dream book with me I decided to jot down the essentials for future consideration.

Much later it occurred to me that the whole thing was probably a sort of confused and extended metaphor. The wine was expenditures, the growers were manufacturers, the bottlers were government departments and the bottles were systems or concepts of cost.

What the green bottle may have been I leave to your imagination.

Pursuing the pleasantly vinous metaphor, private industry has always considered that all costs of every sort, just, unjust, fair, unfair, necessary or unnecessary were the wine and that the bottle, the system and statements, should be capacious enough to hold them all.

Cost was cost because it was money spent. It might be spent foolishly, with bad judgment, recklessly, unproductively, but if it was spent, it was cost.

The concept of a corporate expenditure that was not some sort of a cost was a contradiction in terms. It might not be a factory cost but it was still some sort of a cost: administrative, selling or the like. The only expenditures that were not costs were dividends and Federal income taxes and there was some doubt about these latter, particularly in the minds of public utility officials.

The idea of a vague limbo somewhere in outer space where the bad little expenditures endlessly bemoaned their exclusion from the paradise of the virtuous expenditures which were admitted to the sacred precincts of costs was unknown and would have been considered dangerous and unorthodox, if not worse.

Cost accounting for mines is a good illustration. From one point of view, that of providing costs for management and administrative purposes, it is fairly complex, the requirement being that all expenditures must be related to operations or processes, which involves the distribution and, in many cases, redistribution of expenditures.

But as a problem of finding unit costs it is simplicity itself. We spent so much money, we got so many pounds or ounces of metal. All of our product cost us all of our expenditures and our unit cost was the result of a simple division.

If anyone should tell a mine manager that certain items of expenditures he had already made were improper and others were unnecessary and therefore his cost was not to include them he would reply, as is the custom of such men, in language more forcible than polite, that if he could be shown a way to recover his costs, he'd call them anything any white-collared imbecile wanted to call them, but they'd still be costs.

That expresses, in a simple form, what are, I think, the views of most managers and cost men. There was no criterion of the propriety of expenditures but the judgment of those responsible for them, checked by the possibility of dismissal if too many errors were made and encouraged by hopes of promotion and reward for good work and decreased costs.

Total cost, rather than the propriety of individual items of costs, is the commercial criterion and a grossly excessive, but legitimate cost was held to be more discreditable than a lower cost which included some items of a possibly doubtful nature or which were not susceptible to exact verification.

Two manufacturers each made the same product, a complicated precision instrument.

The first manufacturer paid a few men high salaries, spent a great deal of money in experiments, some of which were without result, made substantial contributions to engineering schools and made other expenditures having little apparent relation to his product.

The second manufacturer was prudent and careful, paid modest salaries and conducted his business on what was an apparently sound and economical basis.

However, the first manufacturer had reduced costs year after year, using plastic parts for metal, using die-castings for molded parts, testing by electronic microscopes, in fact taking time and money to think and plan instead of working on apparently sound but really old-fashioned lines which the second manufacturer did not provide time and facilities to examine and improve.

The point of this story is that, under no system of government cost classification that I am aware of, would the costs of the second manufacturer be held to be anything but allowable, legitimate and reimbursable—they would have all the pass-

ports to the heaven where the good little expenditures go. Yet from an operating or business point of view the costs of the second manufacturer were excessive; he should be held responsible for the excessive costs and steps should be taken to reduce them.

Why would the costs of the second manufacturer have been passed as reimbursable? Because of their nature. They were for labor, material and the ordinary items of overhead. They were the kind of thing that would be "necessary" for the completion of the contract. The first manufacturer, in spite of his lower costs, might have great difficulty in establishing the total of his costs because it might be held that they were by their nature unallowable, even though his total costs were lower. It is conceivable that a more efficient manufacturer could not only fail to be rewarded for lower costs but might actually be penalized for efficiency.

The cleavage between the Government and business idea of a cost is far deeper and greater than the mere exclusion or admission of particular items of cost. The idea that there can be an expenditure which is not a cost is, to a manufacturing executive, disturbing, if not revolutionary. Its implications are basic and far reaching. They imply supervision and control over the producer by the customer or consumer carried to the furthest limit. They make the producer the mere agent of the customer or consumer because the producer is responsible not alone for the quality and price of his product but by using the nature rather than the amount of the costs which are chargeable to it as the criterion of allowability, the customer is really made the judge of the operation of the plant as well as of the product.

When the Government says that there can be expenditures which are not costs what is meant is that there can be expenditures which are not allowable costs, but no one in or out of the Government would contend that expenditures are not somebody's cost and the Government's position is that certain expenditures are not costs with which they have anything to do. Such ideas on cost are not only unknown in a reasonably free, competitive economy, but even if advocated in authoritative quarters would be completely irrelevant because competition would be on the basis of price and the punishment for excessive or improper costs would be the realization of a smaller profit. Where, however, we have an economy such as our present war economy, in which price is determined by cost rather than competition, the nature of the elements of cost rather than the amount becomes the principal concern of the manufacturer or of the producer.

Basically, what we are trying to do is to see that Government contractors receive a fair or "just" price for their product, which price consists of allowable costs plus a reasonable profit. The fact that someone else's costs are much lower does not generally mean that the difference in cost is reflected in increased profit. Clearly in such an economy the control of allowable but excessive costs is difficult and roundabout. The only sound and satisfactory method of control is comparison and the only basis for comparison is good cost records kept on an adequate system. If a producer does actually work under conditions which force higher costs than prevail for others in the industry, he must be paid a higher price if his production is to be maintained but it is only by comparison, both accounting and technical, that we can be sure that the differences are not merely caused by poor management, lack of knowledge of improved processes used by others, lack of managerial ability or by other conditions which can be changed. At present there is no means provided for such comparison between contractors to the Government and any-

thing of the sort which is done is fragmentary and sporadic.

Another method of control is the refusal to give a manufacturer additional contracts but this is generally inoperative in a time when maximum production from all sources is required. The manufacturer does not have the usual incentive to a close control of cost and, if such close control exists, the reasons for it are moral rather than economic. In some cases, they are not even moral but are simply the result of habit.

An industrial manager cannot lose his habits and modes of thought overnight and he will exercise care and work for economy in production even though he knows that neither he nor his company will receive any financial benefit from his efforts. During the war we may assume that all managers are sincerely anxious to produce as cheaply as possible from motives of patriotism or professional pride. The pressure of these motives may be assumed to be strong and universal in war. In peacetime they may become inoperative or at least not as strong as those of genuine competition, where any saving in cost to the efficient producer goes into his own pocket and any unnecessary expense comes out of his own pocket. This is important if present methods are carried over into the postwar economy.

There has been some public discussion of the possibility of providing a cost system which will serve equally well for corporate accounts and for purposes of Government contracts and taxation. Under present conditions and under conditions which are likely to exist after the war, this seems to be impossible.

A system might be designed which would produce a cost composed of first, items allowable for Government contracts; second, by the addition or subtraction of certain items a cost which would be recognized for Federal-tax purposes; third, by the addition of certain other items the actual, complete cost which represents total expenditures. So long as any expenditures are not regarded as costs and so long as items which, for managerial purposes, must be considered as costs are not permitted as income tax deductions, just so long will it be impossible to devise any cost system which will satisfy all three requirements. A manufacturer should bear this carefully in mind because in most cases they will probably rise or fall in the postwar era on the basis of what they can establish as costs.

Large-scale buying by Government will not cease when hostilities are over and large scale Government buying is impractical on a competitive basis. If it were practical, it would probably be considered immoral because it would give the efficient producer a greater proportion of profit than the comparatively inefficient one. It is also probable, if present tendencies may be taken as a guide, that adequate rewards for managerial skill, inventiveness or executive ability will not be permitted and this will be a further influence in the direction of substantially uniform costs, which will tend to approach the highest in the particular industries rather than the lowest.

These observations are not to be considered as condemning or even disapproving present methods or those which will in all probability be forced on us by the logic of circumstances after the war. They are merely put forward as a warning to business men that costs now are not what they used to be and that costs will probably be one of the most important weapons with which business will have to fight for its postwar survival.

If private business has reasonably accurate cost records, it will be in a far better position to demonstrate the unfairness and impossibility of operating against Government competition where certain

elements of cost, such as depreciation, taxes, rents or other expenses, are not considered.

We can hardly look forward long enough to see any substantial reduction of the public debt. Probably the best that can be expected is at some time to arrive at a condition where it is not being increased. So long as this is true, interest rates will be maintained at something like the present low levels. The ability of the Government, by various methods and devices, to draw capital to itself without having recourse to what was formerly considered to be the principal market for capital is well known and a matter of everyday experience. In view of this, private industry can hardly expect to be allowed to survive on the plea that investors should get something like what was formerly considered to be an adequate return on their capital, or that capital should get a sufficient wage if more capital is to be attracted to productive investment. The power of the Government to draw capital to itself and to reallocate this at will to different sections of industries reduces the demand for an adequate wage for capital to a mère ethical proposition devoid of any compulsive force.

We can hardly expect much postwar relaxation of Government control of business and we can certainly not expect any large amount of economic freedom when Government is the principal customer. If the Government endeavors to discharge the responsibilities which it now states it regards as its own, those, for instance, outlined in the speech of Vice-President Wallace, December 28, 1942, it will need to be almost as large a customer of industry in the early years of peace as it has been during the war. It is inconceivable that the U. S. Army and Navy, even though parts of it might be called an international police force, can be reduced to anything like their former peacetime strength. The maintenance of a large Navy and an Army of several million men will itself make the Government a large customer of industry.

Where we have many customers we have price competition among suppliers who wish to supply as many customers as possible. The only control an individual customer can exercise over a supplier is to refrain from purchasing his product. Where, however, we have one customer and many suppliers, the one customer holds almost absolute power over the supplier. If he withdraws or withholds his orders, the supplier must fail as there is no one else to buy. If he increases his orders, the supplier gains inordinately. He receives volume profits without correspondingly increased expenses. An economy where a large part of the purchases of a country are made by one customer will necessarily tend to be a cost-plus-profit economy, if private enterprise is encouraged or tolerated, as the single customer not only controls the supplier financially but may dictate his operating policies and technical procedures.

That this picture is not fanciful is borne out by past experience in somewhat similar situations. A large mail-order house, for instance, will purchase in one year half the product of a small factory at a competitive price and next year will purchase three-quarters of the output and ask for some reduction. After three or four years more, the company's standing in the trade, its customers, its goodwill are nearly gone and the company will become a mere manufacturing department of the mail-order house, producing at just enough above cost to keep it in existence. There are economic arguments for or against this procedure, but there is no doubt about the fact that this has happened many times. A large electrical manufacturing company will decide that some particular item, of which it uses a large amount, say, certain types of cotton yarn or copper wire, can be pro-

duced in a mill of its own more economically than it can be purchased. The competition here is not between suppliers but between cost to the electrical company for the amount of material it needs and what the supplier producing the larger quantity can sell it for. It is a competition between cost and price. When this is multiplied a thousand or ten thousandfold, we get a picture of the result of having one predominant customer in the country. It is a picture which has lights and shadows, which some may find very pleasant and which others may fear. Whether it is good or bad, there can be little doubt of the condition or the possible results and the intelligent businessman should decide first whether he wishes to engage in such an economy at all; that is, whether after the war is over it will be worthwhile to exert the effort and energy necessary to keep a business in existence where the rewards are arbitrarily limited; and second, whether if he, for some motives other than those now generally supposed to animate businessmen, does decide to continue his efforts how he will adapt himself to the changed conditions.

More attention would then need to be devoted to proving his costs than to reducing them as, if he can establish costs which are, perhaps, somewhat excessive, but fall in the right categories, he will be reimbursed. If his costs are lower and cannot be proved, or fall in the wrong categories, they will be disallowed and his profit will be reduced or he will show a loss.

The general policy of encouraging men to prove their position rather than to operate at the greatest efficiency may or may not be desirable. Some characteristics of efficient operation may have doubtful results socially or in the long run. The plant which employs people at higher wages and uses more expensive processes may in some ways be doing a better job than the plant which employs a lower grade of labor at lower wages and uses simpler and more economical processes to produce the same amount and quality of material. Many highly involved questions enter into this and it is possible that our old ideas of speed, efficiency and economy may need to be revised. Unrestrained economic freedom has, for good or ill, vanished and will never return. The manufacturer will never be able to deal with his workmen as a group without some sort of control from an outside source. He will never again have freedom to hire, fire or reward as he sees fit. He will not have the same financial freedom as the practice and, in some cases, the specific statements of those responsible for revenue legislation and administration indicate that there is no intention to stop using taxes for purposes of control as well as for raising revenue. The sources of many raw materials will probably be under Government control for some time after the war and there is no indication of any relaxation of Government control over the sources of the power which he uses and other public utilities which serve him. It is also unlikely that export trade will be free from control. Even though all this control greatly restricts industrial freedom, there is still a fairly extensive area for the exercise of initiative and ingenuity.

It is to be hoped that a genuine desire on the part of the Government to control only what is necessary and to remove and relax unnecessary controls as soon as possible will be exhibited after the war. If there is such a tendency shown, then the businessman should coöperate fully in the exercise of such controls as are necessary. But if there is a disinclination to remove or relax control where this is possible, if there is any desire to control for the sake of controlling, then every businessman, as well as every other intelligent citizen, should protest as strongly and effectively as he can.

And this brings us back to our costs again. The only way to fight fallacies is with facts. The only way to attack harmful theories is with demonstrable truths. And the only way the businessman can do this is by means of accurate costs, the results of the application of a sound cost system.

# POLICIES & PROCEDURES IN FEDERAL CIVILIAN PROCUREMENT[1]

CLEM C. LINNENBERG, JR.

IN THIS paper, "Federal civilian procurement" means Federal procurement of matériel and nonpersonal services other than for the War and Navy Departments and other than for Lend-Lease purposes. In some instances, the term also excludes certain other procurement, such as that for the Panama Canal. These additional exclusions reflect the fact that, in various statutes and administrative regulations bearing on procurement, agencies and functions fall into two groups, with diverse provisions. One group is the War and Navy Departments, with or without a varying array of other agencies, such as the Panama Canal, having a specially close relation to war activity. The other group is residual—in common parlance termed "civilian."

## DIVERSITY OF PROCEDURES

The supplies, equipment, and nonpersonal services purchased for use by civilian agencies of the Federal government amounted, just before the present war, to nearly a half-billion dollars per year. At that time, War and Navy Department procurement together amounted to about the same sum. Each of these figures is exclusive of real estate, rentals, and payments for construction. In Federal procurement there is diversity in the manner of letting contracts, in the degree of formality of contract, in the definiteness of the quantities contracted for, and as to whether the buying is done by the using agency. For the military departments until 1940 and for civilian agencies until 1942, by far the dominant mode of entering into a contract had long been advertisement for bids and award to the lowest responsible bidder. This procedure is called "competitive bidding" although it falls seriously short of invariably evoking price competition. The principal alternative is negotiation. Under war-time statutory authorizations, this procedure has within 1942 risen to substantial importance in civilian procurement, and it is currently by far the most prevalent procedure for letting military procurement contracts. But it has in some measure been used all along in both civilian and military procurement. It differs from "competitive bidding" in that negotiation may entail some bargaining and in that it does not necessarily involve award to the lowest bidder. Moreover, in practice, a contract let through "competitive bidding" is likely to state an exact price per unit or in total. A negotiated contract, at least if for construction rather than for supplies and equipment, is, in practice, likely to involve

[1] This article consists of portions of a dissertation presented in 1941 for the degree of Doctor of Philosophy in Yale University but has been brought up to date as of November 1942. The original dissertation is available in the Yale University Library, New Haven, Connecticut.

a promise by the government to pay all costs incurred by the contractor, plus a fixed fee.

There are of course some articles procured by Federal personnel in petty amounts by means of simple, over-the-counter operations. The oral contract here involved (recognizable as a contract only to a lawyer) is called an "informal" contract. A "less formal" contract involves a document containing the agency's invitation for bids, the bid made by one of the bidders, and (if he is awarded the contract) the agency's acceptance of his offer. A "formal" contract is preceded by separate documents for, respectively, the invitation and the bids.

The Federal government uses both definite- and indefinite-quantity contracts, the latter being known also as "term contracts" and "open-end contracts." An indefinite-quantity contract ordinarily is one by which the government promises that, during a stated period, a specified agency or group of agencies will buy certain specified commodities only from a particular supplier. The supplier promises that he will sell to the agency or agencies as little or as much as they wish to buy of those commodities during the period named. A minimum-quantity contract differs from an indefinite-quantity contract only in involving a commitment by the government as to the minimum amount that it will buy.

The Supreme Court long ago upheld the right of the government to buy far less under an indefinite-quantity contract than the estimated amount.[2] Indeed, it is generally conceded that the government could legally refrain altogether from buying anything pursuant to the contract, provided that no other supplier be substituted.

The Court has held that indefinite-quantity contracts are valid[3] and, later, that they are not,[4] the reasoning in the more recent case (1923) being that such a contract lacks consideration and mutality. Consternation was indicated in the 1923 case over the zero-to-infinity range of such an agreement.

Procurement officers encounter the General Accounting Office far more frequently than they do the courts. But it was 1934 before the Comptroller General adopted the view expressed by the Supreme Court in 1923, and even then he stated that a definite-quantity contract with a provision for a 25% deviation upward or downward would be valid.[5] A half-year later, he held that indefinite-quantity contracts are valid.[6]

Even some of the best informed Federal procurement officers are unaware that the Supreme Court and the GAO have each in turn condemned indefinite-quantity contracts. For all practical purposes, both opinions are in limbo.

The Procurement Division of the Treasury Department is the nearest approach which Federal procurement has to centralized buying. It effects or aids in a far smaller percentage of the War and Navy Departments' total purchases than of civilian agencies' total purchases, and at present is of course overshadowed, in importance as a buying agency, by each of the former two agencies' vastly increased procurement. For convenience, this Treasury bureau will usually be referred to in this article simply as "the Procurement Division," in keeping with common usage in the government. (1) The Division has a warehouse in Washington and maintains in it a stock of about 1,700 articles of very

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[2] *Brawley v. United States*, 96 *U. S.* 168 (1878).

[3] *United States v. Purcell Envelope Company*, 249 *U. S.* 313 (1919).

[4] *Willard, Sutherland, and Company v. United States*, 262 *U. S.* 489 (1923).

[5] 14 *Comp. Gen.* 446.

[6] Unpublished decision A-60569, July 12, 1935. See also 19 *Comp. Gen.* 980 (1940).

common use, such as soap and guide cards. It buys these chiefly by definite-quantity contracting, financed by a revolving fund of $5,000,000, the General Supply Fund. On a mandatory basis, all headquarters offices of Federal agencies (civilian and military) in the District of Columbia buy from the stock thus maintained, paying a surcharge of 5% for the Divisions' services. Economy results from the Division's consolidation of petty purchases and from an inspection service. (2) The General Supply Fund is also used to purchase any article which the Procurement Division buys for any Federal agency at the latter's special request. An agency wishing to make an isolated purchase of, let us say, a machine of some sort may lack personnel with the appropriate technical knowledge for deciding just what should be bought. (3) The General Schedule of Supplies is a series of pamphlets showing the articles and prices provided in indefinite-quantity contracts arranged by the Procurement Division on behalf of the whole Federal government. Currently there are about 900 such contracts in effect (exclusive of about 740 gasoline and lubricating oil contracts), for periods varying in length from three to twelve months. Because, in wartime, prediction of costs and supply is increasingly difficult for contractors, the proportion of three-months contracts has of late been substantially increased. The twenty-odd thousand items contracted for are as diverse as smoked bacon, ammoniated mercury, and bunsen burners. All headquarters offices of Federal agencies in the District of Columbia are required to buy from the General Schedule, and for specified items the requirement extends to Federal agencies in other, specified areas. In addition, some agencies have their field offices use the General Schedule even if not required; but assent of the respective contractors is necessary. Of all purchases by the War Department, purchases by it from the General Schedule are only a small percentage; but the War Department now buys more from the General Schedule than do all civilian agencies combined. (4) Since the inception of the WPA, in 1935, procurement for it has been entirely in the hands of the Procurement Division (of the Treasury Department), acting through its field offices, which are largely limited to this one function and which have great autonomy. Indeed, buying for the WPA outweighed all other purchasing done by the Procurement Division until the passage of the Lend-Lease Act. With the important exceptions of WPA and Lend-Lease procurement, the Procurement Division has had, in percentage terms, no very large role in Federal buying, and, of course Lend-Lease procurement is not a civilian function. In a representative year before World War II, WPA procurement amounted to about 20% of the purchases by all Federal agencies, or about 45% of the purchases by Federal civilian agencies, or roughly 75% of the purchases by the Procurement Division (if purchases by using agencies from the General Schedule of Supplies are not regarded as purchases by the Procurement Division). (5) In the fiscal year 1940 the Procurement Division took over the entire procurement function of several civilian agencies, but within the same year it returned to those agencies the newly acquired function except as regards definite-quantity purchases in excess of $100 each, effected in the District of Columbia. (6) Within the past year, the Procurement Division has (for civilian agencies) taken over the procurement, on a definite-quantity basis, of all of certain important specified items hitherto purchased by the using agencies themselves.

Despite purchases from or with the aid of the Procurement Division, and procurement from a miscellany of sources which includes the Government Printing Office and Federal Prison Industries, Inc.,

the most prevalent mode of procurement in both civilian and military agencies is direct purchase by the using agency, from commercial sources, pursuant to contracts arranged by the using agency itself. Such contract-letting is done both in Washington and in the field. It involves diverse degrees of administrative and geographic centralization. Thus the Social Security Board has, in procurement, a high degree of administrative centralization (centralization as among bureaus) and of geographic centralization. The Department of Agriculture has considerable procurement decentralization on both counts.

CENTRALIZATION TRENDS BEFORE 1933

The procurement of supplies and equipment, like some other aspects of American Federal administration, began with a measure of central responsibility which it subsequently lost. To Alexander Hamilton, credit has been given for a law of 1792 which conferred upon the Treasury Department the function of buying all matériel (including "military stores") for the use of the War Department. Three years later the office of "Purveyor of Public Supplies" was created in the Treasury, and the Purveyor was given the procurement function for the entire government. That degree of centralization has never obtained since the brief period for which this early enactment was allowed to stay on the statute books. In 1798 the Purveyor's role in military procurement was reduced to an authorization to conduct as much of that task as should be determined by the Secretaries of War and of the Navy, respectively, and to conduct it under their direction. By a law of 1812, the office of Purveyor of Public Supplies was abolished, and the office of Commissary General of Purchases was created in the War Department. Thus ended the Federal government's first venture into centralized buying.

A law of 1862 established a "Returns Office" in the Department of the Interior. To improve procurement by publicity, copies of all contracts of that Department and of the War and Navy Departments were to be filed in this office for public inspection. In the 1920's success crowned a considerable effort by Comptroller General McCarl to get the Returns Office transferred to the General Accounting Office. Unsuccessfully, he tried to get the logical next step taken: an enactment to make unnecessary the duplication involved in these three Departments' furnishing contracts to the General Accounting Office in its original capacity and in its capacity as Returns Office.

The Cockrell-Dockery Commission, deploring price diversity greater than two-to-one in Federal buying, induced Congress to create in 1894 an *ex officio* Board of Awards to review the bids submitted in response to bid invitations of Federal agencies in the District of Columbia, but not of Federal agencies elsewhere. The Board was given the authority merely to *recommend* acceptance or rejection.

In Theodore Roosevelt's time, the Keep Committee complained that price diversity was still great and that grades and types of articles bought were chaotically numerous. On the basis of the Committee's recommendations, a General Supply Committee was created in 1909–1910 and the Board of Awards was abolished. The Committee was to consist of one representative of each agency, and was to operate under the direction of the Secretary of the Treasury. As a basis for consolidation of contracts, standardization of specifications was to be effected. The Committee was to arrange consolidated contracts for the commodities with which the Board of Awards had concerned itself. Thus was begun the General Schedule of Supplies—"General" in the sense of "interdepartmental." But it was many years before the

General Schedule became mandatory with respect to any field activities.

Soon after the adoption of the Budget and Accounting Act of 1921, which created the Bureau of the Budget,[7] the Director of that Bureau established several interdepartmental schemes relating to procurement, such as the Federal Specifications Board and the Interdepartmental Board of Contracts and Adjustments, the functions of which are discussed below. The General Supply Fund, originally under the General Supply Committee, was created by an act of 1929. Construction of the necessary warehouse in Washington for maintaining the Committee's stock was authorized at the same time.

### CENTRALIZATION TRENDS, 1933–1940

Four years later, proceeding under a statutory authorization to reorganize the Federal administrative machinery, President Roosevelt created the Procurement Division of the Treasury Department. Certain functions in the construction and management of Federal buildings were placed in the Division, although those functions have since been shifted elsewhere. The other major task assigned to the Procurement Division—procurement, warehousing, and distribution of matériel—still remains there. Two aspects of that task were, by provisions of the Executive Order creating the Procurement Division placed in that Division immediately. (1) The General Supply Committee was abolished and its work was taken over by the new Division. (2) The Fuel Yards of the Bureau of Mines were transferred to the Procurement Division. The remainder of the responsibility for matériel-procurement for the entire Federal establishment, civilian and military, was given to the Procurement Division conditionally. ***With the President's further approval***, the Division could choose among alternative degrees of control over any of the procurement for any one agency, these degrees ranging up to direct conduct of such procurement by the Procurement Division. The same Executive Order created in the Treasury Department a Division of Disbursement, which was to do all disbursing of moneys for the whole government. Apart from disbursement for the Post Office Department and field disbursement for the military, this provision for centralized disbursing was, over the course of four or five years, gradually made almost wholly operative. The story concerning procurement has not run parallel.

In June 1939, six years after the creation of the Procurement Division, the Director of Procurement issued an order, countersigned by the President, which would have given it a large role indeed. The order provided that the Division " . . . shall hereafter undertake the performance of procurement of all supplies for use either at the seat of government or in the field for all . . . government agencies [except the War and Navy Departments]. . . . " Administrative funds for procurement (funds for salaries of procurement personnel, etc.) were to be transferred to the Division, with the approval of the Secretary of the Treasury and the Director of the Bureau of the Budget.

The Procurement Division contemplated effectuating the order gradually, by bringing only one or a few agencies into the scheme at any one time. However, when the Director of Procurement proceeded to put the order into effect with respect to several agencies, no approval of transfer of funds was forthcoming from the Budget Director. Subsequently, the Director of Procurement returned a part of the pro-

[7] Until 1939, a part of the Treasury Department; since then, a part of the Executive Office of the President.

curement function to the several agencies from which it had been removed;[8] and the order was not applied to any additional agencies.

CENTRALIZATION TRENDS, 1941–1942

On December 30, 1941, a new approach was made toward effectuating the order of June 1939. The new approach, like the old, was to be gradual. But instead of taking over all procurement for one agency, and then all for another, and so on, the Procurement Division was to take over the procurement of a single group of items for all or most agencies, and then the procurement of another group of items, and so on —group by group rather than agency by agency. The Director of Procurement announced a policy (Circular Letter No. 535) established jointly with the Division of Purchases, Office of Production Management,[9] pursuant to the authority conferred upon the Procurement Division by Executive Order 6166. According to this policy, all Federal agencies were to supply the Procurement Division with forecasts of needs, for the remainder of the fiscal year, for selected major items to be specified by it in subsequent orders. Purchases of these items were to be consolidated either in the Procurement Division or in other agencies, designated by it. Procurement of the selected items was to be "... coordinated with the Division of Purchases, Office of Production Management, so that there may be adopted the best means to provide government agencies with their essential needs of the designated articles in the light of the availability of such articles." For some items, the item-by-item increase of the Procurement Division's coverage has also been effectuated by certain War Production Board limitation and conversion orders and Office of Price Administration rationing orders, in which were included provisions that the types of matériel covered by the orders be bought thereafter for Federal civilian agencies through the Procurement Division.[10] The main items the purchasing of which has been taken over in the past year by the Procurement Division pursuant to this policy of the Division and of WPB and OPA are motor vehicles; domestic mechanical refrigerators; various items of electrical equipment and supplies; machinery of any sort, if in lots of $300 or greater; typewriters; wood desks and wood file-cabinets; wood, lumber, timber and their products if in lots of one carload or more; paper and paper products of certain types (in quantities of $200 or more). In considerable measure, the Procurement Division felt that the policy of December 30, 1941, was necessary because of competition among the using agencies. They are stated to have caused each other to have to pay higher prices, the Emergency Price Control Act of 1942 not having yet been passed.

Each Procurement Division order issued under Circular 535 has exempted specified agencies having an especially crucial role in the conduct of the war, the most frequently exempted agencies being the War and Navy Departments and the Maritime Commission. In the procurement of passenger automobiles, there is a joint procedure with the Office of Price Administration, which rations these. In the procurement of trucks, tractors, and trailers,

[8] This shift of function has been referred to in the description of the Procurement Division's responsibilities in the first section of this article.

[9] Since then succeeded by the Procurement Policy Division, War Production Board.

[10] See WPB Conversion Order No. L-54-a, subparag. (h)(4), and OPA Rationing Order No. 4, secs. 1398.102 (a)(8) and 1398.102(b)(7), both on typewriters; WPB Supplementary General Limitation Order No. L-5-d (on domestic mechanical refrigerators) and the WPB procedure for the Distribution of New Domestic Mechanical Refrigerators under Limitation Order No. L-5-d.

which are rationed by the War Production Board and the Office of Defense Transportation, there is an analogous relation to those two agencies. In a different sense, the war effort was reflected in a Procurement Division order of January 1 which directed that requirements for electric fans "that may be needed during the summer of 1942" be promptly anticipated (so that effective planning would be possible) but which nevertheless warned that purchases be restricted "to the utmost."

Originally the Procurement Division contemplated that under Circular 535 it would get estimates of needs for periods of six or even eighteen months in advance. However, most agencies state that they cannot predict their needs for the respective articles in advance, and accordingly the consolidation of purchases by the Division has not been able to go beyond the combining of orders for a period of several weeks.

In common with other buyers, Federal agencies are subject to priorities. A distinction is made between (1) priorities for the War and Navy Departments and several other agencies especially important to the war effort, such as the Panama Canal, and (2) the remaining agencies. Until recently, requests of these latter agencies for priority assistance were considered by the WPB *ad hoc*. Beginning with the period July-to-September, 1942, each agency in this group, if it desires priority assistance, has been required to submit to the WPB Governmental Division a quarterly application under a "Governmental Requirements Plan." The intention has been to establish an orderly, over-all control for priorities purposes.

Form PD-408, Section A, is the application for priority assistance for equipment requirements. This calls for a description of the equipment for which priority assistance is asked, a statement, with regard to each item, of the quantity desired during the next quarter-year (broken down as "replacements" and "additions"), and a justification of each item. Preference ratings (i.e., priorities) are assigned separately for each item, and of course may be specified as applying to some quantity less than that on which assistance is asked.

Form PD-408, Section B, concerns requirements for maintenance and repair materials and operating supplies. This has no itemization. Based on eight categories as broad as "aluminum" and "fabricated parts," there is information concerning the preceding quarter (e.g., the April-to-June quarter, in the application for October-to-December assistance). This is the dollar-value of the inventory on hand at the end of the preceding quarter, the dollar-value of consumption in that quarter, and (for four of the categories) the weight of what was consumed in that quarter. The amount of expenditures for *all* maintenance and repair materials and operating supplies (with no breakdown, and irrespective of whether scarce) is asked for the preceding quarter and for each of the last two completed fiscal years. The three parallel items are asked for total expenditures of the agency. In most agencies, "total expenditures" is predominantly salaries; but the ratio of expenditures for supplies and materials, to total expenditures, varies widely, being partly dependent upon the nature of the agency's functions. The application form also calls for a single dollar figure on the total requirements for which priority assistance is being requested. In view of the almost wholly worthless character of the data obtained, it is not astonishing that the assignment of preference ratings is for a specified dollar-value of all maintenance and repair materials and operating supplies considered jointly, with three levels of priority, each for a specified percentage of this aggregate. This means that priorities have to be assigned which are low enough to be useless, or which the

WPB cannot know that the agency merits, or which are based on discussions with the agency following the application. In any event, no genuine system appears to exist.

Since 1918 the General Supply Committee and the Procurement Division, in turn, have disposed of property declared surplus by agency heads. By mimeographed circular, the Procurement Division at intervals notifies the various agencies of surplus property declared to it. If one agency needs an article declared surplus by another, the former may obtain it. If no agency needs the article, the Procurement Division sells it.

The reluctance of agencies to declare that they had no need for something they possessed, led to a for-the-duration Executive Order, No. 9235, effective October 16, 1942. This applies to all Federal agencies; but the expansion now under way in the War and Navy Departments indicates that the latter will only be recipients, not donors. Furthermore, the order is not applicable to tactical supplies and equipment of the War or Navy Department or the U. S. Maritime Commission; food and clothing; materials for the construction or maintenance of housing and other physical improvements; Lend-Lease matériel; or stock-pile matériel. The Bureau of the Budget is directed to survey supplies and equipment possessed by the government, and their utilization; and the Bureau may require the interagency transfer of matériel which it deems surplus to the needs of one agency and essential to the needs of another. The Bureau is required to consult with the WPB about these actions. It is to utilize the Procurement Division in making surveys. Also, the latter organization is directed to undertake such warehousing, rehabilitation, and physical distribution of Federal matériel and to take over such Federal warehouses and appurtenant personnel as the Bureau of the Budget "may approve."

With the encouragement of the Bureau of the Budget, two departments have each appointed an "equipment and supply conservator," and the Bureau desires that such an officer be appointed in each agency. It is this person's function to insure that the agency does not purchase nonexpendable matériel if the same article is available within the agency. Preferably, this officer is the same individual as the agency's chief procurement officer, but such an arrangement obviously presupposes that the latter functionary exists.

The GAO and the Bureau of the Budget have jointly developed a current inventory system for nonexpendable property. The Bureau of the Budget urges each agency to adopt a system modeled on this, as a necessary device for insuring that matériel does not go unused. The Bureau of the Budget, the Procurement Division, and the GAO have, each in its own way, been interested all along in the protection of the government's interest in the fiscal processes of or leading up to the purchase of matériel, and the latter two organizations have had an interest in the disposal of it. Interdepartmental surveillance during possession has been almost wholly lacking, and even intradepartmental surveillance has not been universal. If the government is now becoming aware that it owns personalty, it may awake sufficiently to its realty to handle capital expenditures in its budget and accounting records differently from current expenses.

To increase executive and Congressional control over finances, the Bureau of the Budget has issued a regulation requiring that each agency receiving surplus property shall pay for it, the money being covered into the Treasury as Miscellaneous Receipts rather than being used for reimbursement of the relinquishing agency[11]

[11] A law of 1928 (40 *U. S. C. A.* 311a) applies such a requirement to agencies in the District of Columbia but not to others.

(unless the latter's appropriation act specifically requires it to be reimbursed). To the same end, the regulation requires that savings accruing to an agency through purchase of surplus (instead of new) equipment and supplies shall be set up as a reserve (i.e., impounded).

Within the first half-month after issuance of Bureau of the Budget regulations implementing Executive Order 9235 more than $250,000 of property was declared surplus and over $100,000 of surplus property was transferred to other agencies. Actual operations of custody or transfer are still performed by the Procurement Division. But agencies which hitherto have not bestirred themselves to discover whether they have surplus property know that they will regularly appear before the Bureau of the Budget to justify their requests for funds, and that now this same organization has authority with regard to surplus property. Hence the prospect is that the Bureau will not need to exercise its authority to require the relinquishment of surplus property, or its authority to require an agency to accept used matériel rather than to buy new. Spot-checking will be done by the Procurement Division on behalf of the Bureau of the Budget to ascertain whether the latter's regulations are being complied with.

It is contemplated that the Executive Order's provision on warehousing will be carried out by the establishing of a system of zone warehouses under Procurement Division auspices. This is intended partly for the economy in warehousing that may result from supercession of separate agency warehouses in the field. In part it is intended as an aspect of increasing the number of items to be bought as Procurement Division stock, and extending to the field agencies the obligation already long since placed upon departmental offices in Washington to buy from that stock. The warehousing part of the Executive Order, perhaps even more than the surplus property part, is of longer-range importance than the present time-limit of the Order suggests.

Centralization trends in Federal civilian procurement are at present focussed in the Procurement Division, the WPB, and the Bureau of the Budget. Centralization as regards actual buying is located only in the first, but the pattern of control is nevertheless confused, and there is no overall planning.

#### CENTRAL CONTROL OF SPECIFICATIONS AND FORMS

For the largest possible economy from the consolidation of two or more agencies' purchases, the agencies must use specifications in common. Furthermore, wide acceptance of standardized specifications among governmental and commercial buyers and among manufacturers is, to a degree, promotive of competition. The General Supply Committee made some progress in the standardization of suppliers in its first decade of existence. Then in 1921 the Director of the newly created Bureau of the Budget established a Federal Specifications Board (as noted above), representing all agencies. Its "Federal Specifications" were to be mandatory. In turn, the Board has been succeeded by a Federal Specifications Division, located in the Procurement Division and using substantially the same procedure of interdepartmental consultation as that formerly employed by the Board. "Federal Specifications," which do not cover any strictly military articles, now number about 1,300. In addition, there are various agencies having their respective sets of departmental specifications for many items not thus covered, plus *ad hoc* specifications. Very little policing work is done by the Procurement Division to insure that Federal specifications are followed. It and the GAO have found few violations, and the aggregate number is

estimated not to be large. Requests to the Procurement Division for permission to deviate usually set forth persuasive reasons, in terms of distinctive technical needs; and usually permission is granted. Recently many Emergency Alternative Specifications have been established by the Division. These arise from war-created scarcities of particular materials. In principle, there is a choice between any such specification and the corresponding "regular" Federal Specification. In practice, the priorities granted to civilian agencies are low enough that they have to use Emergency Alternative Specifications.

The standardization of Federal contract forms, another sorely needed type of uniformity conducive to competition, was introduced by the Interdepartmental Board of Contracts and Adjustments, which, as remarked above, was created in 1921 by the Director of the Bureau of the Budget. Examining the existing forms for contract and for allied procedures, it found them confusingly and needlessly diverse in format, content, and other respects. The Board displaced this chaos of documents with 18 Standard Forms for civilian and certain military procurement, which were put into effect on the President's authority. The Procurement Division and an interdepartmental committee acting in an advisory capacity to it have since succeeded the Board in this field. New and revised forms must be approved by the Secretary of the Treasury and are promulgated in the *Federal Register*. Neither isolated nor blanket exemptions from the standard bulk large in civilian procurement. Exemptions are permissible only when granted by the Director of Procurement and the Secretary of the Treasury. The principal Standard Forms of contract now number about fifteen and are illustrated by Standard Form No. 30, "Standard Form of Invitation for Bids (Supply Contract)"; No. 31, "Standard Government Form of Bid (Supply Contract)"; and No. 32, "Contract (Supplies)."

Addressing himself to steps in the procurement process different from those covered by the Procurement Division Standard Forms, the Comptroller General has likewise prescribed sundry Standard Forms for use in procurement, and along with these he has laid down procedures to be observed in their use—e.g., a system for the numbering of contracts. The chief object is to simplify the General Accounting Office's investigative work, but a byproduct is that firms selling repeatedly to the government have *less varied* red tape to become familiar with than they would have in the absence of this enforced uniformity. Another by-product is that such firms and numerous Federal employees are confronted by perhaps a larger quantity of red tape than, in petty purchasing, would be their lot if the Comptroller General had left to the various Federal agencies a wider discretion as to documentation. His enforcement of the use of his Standard Forms is made easy by the fact that they are required to be routed to the GAO, in the original and, in some instances, in carbon copy also. One of the GAO Standard Forms is No. 1036, "Statement and Certificate of Award." It is required to be used in all transactions involving expenditure or receipt of Federal funds under almost any written agreement, whether "formal" or "less formal." Its purpose is "to establish the fact of compliance with law and good business administration in respect to advertising, securing competition, acceptance of bid of the lowest bidder . . . , and execution of a lawful agreement." This form, signed by the contracting officer, must accompany the written agreement on despatch of the latter to the GAO. No. 1036 enables the GAO to decide, but not necessarily to know, whether advertising was adequate. Another illustrative function is that it enables

the GAO to enforce its views on what method of award of contract should be used when identical bidding occurs.

Among the various GAO-prescribed "public-voucher forms" (i.e., forms used in making payments to payees other than a second Federal agency) is Standard Form No. 1034, "Public Voucher (Original) for Purchases, and Services Other Than Personal." This is used as evidence of the receipt and acceptance of the articles or services bought, either under a written agreement as to which the contracting officer has certified on No. 1036, or under the circumstances stated in No. 1034 if purchase was without a written agreement. This formidable document must be executed even for very trifling purchases.

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# THE PLACE OF ACCOUNTING IN PRICE CONTROL

CHARLES W. LAMDEN

PRICE CONTROL is made necessary by the conditions which result from a War Economy. The nation's purchasing power increases at the same time the goods available for consumption and use decrease and a "gap" develops between the total expendable incomes and the total goods available in the community. More people are working than in normal times and more goods and services are being produced, but the major portion of these goods and services must be appropriated for military purposes. The gap, then, develops in civilian goods and services—individual incomes increase while the amount of goods available to be purchased becomes less and less. As the military and civilian demands for raw materials and labor increase costs go up and prices begin to rise. Allowed to run its course the "price-cost" inflationary spiral would envelop all sectors of the economy and would end in economic disaster.

To combat the danger of inflation national price control has been established. Beginning under the authority of an executive order and operating primarily by means of voluntary agreements to keep prices down, our present price-control program has expanded to the point where the price of almost every commodity and service in the community is controlled by some price regulation.

While the aim and primary importance of price control is to prevent runaway inflation, the full significance of the program can be viewed only in the light of the large amount of economic control which is exercised over all business.

One thing appears certain. It is that the effectiveness as well as the very basis of the control both in a wartime and peacetime economy will depend upon accounting. Of course the law is important because the law presents the regulations, the directives, and the boundaries within which the control must operate and the law provides for the enforcement and penalties involved in the event regulations are violated. Nonetheless, the law itself is couched in accounting terms and the administration of the control within the boundaries of the law as well as the evidence of compliance with or violation of the law are based on accounting and accounting procedures.

Public-utility regulation was probably

the first major type of government regulation of business which affected the financial operations of business. While the control was far-reaching as it affected many individual public-utility companies, and while the essence of the control to obtain a "fair rate" for the services supplied as well as a "fair return" to investors is similar to the aims of price control, the regulation was limited to one type of industry which was a relatively small segment of the total business of the country. Moreover public-utility regulation was superimposed on an industry which falls into the category of a "natural monopoly" and which cannot operate successfully by means of the price mechanisms as can the other competitive industries. Nevertheless, accounting has played a very important part in public-utility regulation and much of the difficulty arising in the administration of the control came from legal and other misconceptions of correct principles and procedures of accounting.

The development of State and Federal securities regulation culminating in the establishment of the Securities and Exchange Commission brought forth the most extensive control of business until the advent of price control. The legislation embodying the Securities Act, the Securities and Exchange Act and the Public Utility Holding Company Act are all based on control by means of accounting analysis and presentation. The administration of this type of control rests on the presentation of financial statements. In this the Law demands "full and fair disclosure" of the financial condition of the corporation. Full and fair disclosure of the financial condition of a business calls for the presentation not only of the assets and liabilities of the corporation but makes necessary the clear presentation of the results of the recent operations in terms of earnings of the corporation.

By requiring corporations to present their financial statements regularly and by requiring that certain methods of presentation be followed, the government can exercise considerable control over various phases of the operation of business.

In a freely competitive economy price is the most important regulator of the internal operations of a business. While individual business concerns compute costs in order to determine selling prices or at least to determine their costs so they may be kept below the selling prices which are determined by the interaction of the market forces, prices may vary considerably from the costs of production. In a war economy where normal competitive conditions no longer exist, and where by the very nature of the productive needs and the continued lag of the supply of goods behind the demand for them, prices lose their regulatory effectiveness in the inflationary spiral. To avert the disaster and dislocation caused by inflation and then sudden deflation prices must be artificially held down and human calculations must be substituted for the impersonal dictates of the complex market mechanisms.

If price control is to become effective and workable it must be applied to all goods and services. Selective price control has its place when a price-control program is being started and when some industries have not yet reached capacity production and no inflationary pressure yet appears.

In the operations of the Office of Price Administration selective price control was begun as early as the fall of 1940 in an effort to control "strategic prices." In the early stages of the program attention was concentrated upon basic materials such as metals, building materials, industrial chemicals and textiles. With the continuation of inflationary pressure, the scope of the price action was extended to semifabricated materials, machinery, and finished goods at the industry level. In April and May of 1942 control was extended to

the retail level by means of a broad overall price ceiling and additional controls were placed on rents.

Only two major elements of the price structure, namely, wages and farm prices, were not under satisfactory control by September, 1942; this, of course, was due to restrictions in the Emergency Price Control Act itself. Since the legislation remedying this situation has been acted upon, the possibility of maintaining a broad overall price ceiling is becoming a reality.

Once a broad ceiling is established the function of the price-control agency changes considerably. Instead of seeking to find prices which are getting "out of line" and establishing ceilings for them, the primary function of the agency is to enforce the regulations, to ration scarce commodities, and to give a special consideration to individual commodities which cannot be produced or to individual concerns which cannot continue to produce under the initial ceiling. The burden of proof, then, is shifted from the Office of Price Administration in establishing a price ceiling to the business man in showing that the ceiling price is not fair and equitable or that he is entitled to special consideration because the ceiling works an "undue hardship" on him.

In cases where the ceiling price works a hardship on an industry or on an individual concern and where the product being produced is essential for the war program or for real civilian needs and the necessary production is not forthcoming at the established price, relief may be granted by means of a subsidy or an adjustment of the ceiling. If the difficulty arises because the ceiling price is too low for the industry, the entire regulation, or that part of the regulation affecting the particular commodity may be adjusted. Where the ceiling works a hardship only on individual concerns, the adjustment may apply to the individual concern.

Some of the maximum price regulations of the Office of Price Administration have set price ceilings in terms of one price for all sellers of a commodity. Such prices may be liberal for low-cost producers and yet work definite hardships on high-cost producers whose output is needed for war purposes. Under these circumstances it may be necessary to give differential treatment to high-cost producers. Many of the regulations that have been issued, however, have not established one price as the ceiling price but rather have established base dates which sellers must use in determining their maximum prices. The General Maximum Price Regulation, for example, which covers most commodities and services at retail and most of the other commodities and services which are not covered by other regulations and which are not exempt from price control, stipulates that sellers of the items covered by the Regulation may not charge more than the highest price which they charged during the month of March, 1942.

Price ceilings which are established by taking a base date or period and requiring business concerns to use the prices which they charged on that date or during that period as their maximum prices allow different concerns to get different prices for the same commodity. In this way high-cost producers can get higher prices and still maintain their "ceilings." While this flexibility has its advantages, more effective price control can be obtained by means of dollars and cents "ceiling prices," and separate regulations which take individual products out from the General Maximum Price Regulation are constantly being issued.

Even with base-date price ceilings, though, price advances may be necessary to increase or to maintain the production and distribution of the needed supply. Rising costs of production may have been absorbed with the anticipation of future

increases in price; costs may have advanced above or dangerously close to selling prices at the base date without any price advances being made, or cost increases subsequent to the base date may have cut down or eliminated profits. Shortages or restrictions on the use of materials necessitating substitution and increasing costs, increasing labor costs, costs of conversion, developmental costs, or low introductory prices may all make it necessary for a concern to request a price increase above the "ceiling" established on the base date. It is therefore obvious that regardless of the type of "ceiling" established price relief will be required in special cases.

The problem then becomes one of setting up the proper criteria for granting price relief when it becomes necessary. A great deal of the success in obtaining compliance with the regulations and maintaining enforcement will depend on the flexibility of the regulations and the facility with which needed relief may be obtained. On the other hand the indiscriminate granting of price increases will destroy the very thing for which price control stands.

Under normal competitive conditions business men feel it necessary to raise prices in proportion to increases in costs. In a war economy, however, the "price-cost" procedure is the formula for inflation. It is therefore necessary to ask producers and sellers all the way along the line to absorb cost increases to the greatest extent possible.

In addition to the primary requirement that production be maintained or increased it is also necessary for those seeking relief to show that direct cost per unit of production has risen above price or so close to price that there is an insufficient margin for contingencies and for calling forth the continued production of a needed good. A price advance which does not affect the volume of output but which merely makes possible the increase of profits or wages or both is clearly inflationary.

The justification for granting price relief varies as the price-control program progresses. In the early stages of the program when selective-price control was being used, most industries were operating below capacity. Expanding output was therefore accompanied by falling unit costs, and despite the fact that wages were being increased and some material prices were increasing, the profits of many concerns continued to increase. As long as unit costs of production are decreasing there is certainly no justification in granting price increases because of increased labor and material costs. However, when labor and material costs begin to increase more rapidly than unit overhead costs decline, price increases may be requested. As long as total unit costs are covered and as long as the overall profit position of the company is satisfactory in comparison to its "normal" peacetime profit position,[1] price increases ordinarily cannot be granted. However, when "out of pocket" costs cannot be covered in the production of additional units (i.e., when marginal direct costs are not being covered even though average direct costs are more than covered) and when this situation causes a decline in overall profits as compared with the base period, price relief is then in order.

As the war-production and price-control program progress, more and more concerns reach the situation where output is pushed beyond the point of most efficient use of plant in the sense of lowest cost use. Additional production becomes more costly rather than less costly even if the cost of labor and material does not increase. For example, wage rates may not rise but the efficiency of labor will decline and the production per man hour may drop sub-

[1] In most cases the base period for determining "normal" peacetime profits has been established as the period 1936–1939.

stantially. When the out-of-pocket costs per unit, or the additional cost of extra units, of output increase either because of the increases of wages and material prices or because unit costs rise with expanded output a question arises as to whether price increases are justifiable.[2]

A serious problem also arises where the maximum price covers all direct costs, but the firm can make more profit by shifting to some other product and will do so unless it gets a new price high enough to cover all of its costs and allow it a profit. Where the product being manufactured or sold is essential for the prosecution of the war and where it cannot be supplied by anyone else, or can be supplied only at a price higher than the requested price, relief sufficient to call forth the necessary production may be granted.

As has been stated, businessmen would like to increase their prices proportionately to their cost increases but this is a sure formula for inflation. As long as businesses can absorb cost increases and still continue to supply the needed production it is necessary that they be required to do so. Where the margin between price and direct cost has been large and where unit costs do not rise too rapidly cost increases can be absorbed for long periods of time.

The criteria used to determine whether or not a company can continue to absorb cost increases once they begin to appear must be based on the relative profit position of the company. In most instances cost increases must be actual and not anticipated and they must be reflected in the profit-and-loss statement. Since the basic criterion for price increases is the maintenance of the needed supply or expansion to the needed volume, profits must be adequate to achieve this objective.

[2] For a discussion of this point see D. H. Wallace and P. H. Coombs, "Economic Considerations in Establishing Maximum Prices," *Law and Contemporary Problems*, Winter, 1942.

The stipulations of the Emergency Price Control Act are that the price ceilings shall be "generally fair and equitable." Among "relevant factors" to be considered in determining "general applicability" of any maximum price are " . . . general increases or decreases in costs of production, distribution, and transportation, and general increases or decreases in profits earned by sellers . . . "[3]

The question as to what are "adequate" or "fair" profits is a difficult one. A fixed ratio to sales or a fixed ratio to net worth may be used but due to the variation of rates of return between various industries and between various concerns in the same industry such a procedure may hinder rather than aid in the attainment of maximum production. Rather than using a fixed rate of profits for all industries or for all concerns in an industry it appears to be more expeditious to set up a base period which is to represent "normal" or at least prewar conditions. The average profits earned by the concern during the base period can then be compared with current profits in determining fairness or adequacy. This, of course, can be only a general rule, for in some instances where the business was not in existence or operation, where base period profits are not sufficient to cover risks necessary to bring forth the needed volume of production, or where there is some other unique reason, base period profits may not be a fair standard.

In general, the use of the base period 1936 to 1939 inclusive is a fair procedure for it combines the relatively profitable year 1937 with the relatively unprofitable year 1938 and gives an average which does not reflect conditions which are a result of a war situation.

To obtain the average base-period profits, the net profits before income and ex-

[3] Emergency Price Control Act of 1942 (Public Law 729—77th Congress).

cess-profits taxes for each of the four years must be used. Net operating losses for any of the years are usually treated as zero. Of course, where the average of the base period shows a loss some other standard, rather than base-period profits, must be used. Merely because a concern has changed from peacetime to war production, however, does not make the base-period profit figures inapplicable since the normal profitability of the concern is the important factor.

A declining ratio of profits to sales will not automatically justify a price increase since the total dollar profits may be increasing even though the ratio to sales is declining. Therefore, the total dollar volume of profits must be taken into consideration. In using total dollar profits, increases or decreases in net worth must be considered. The ratio of profits to net worth is a good standard in this respect inasmuch as it will take into effect changes in net worth.

In many cases, however, the ratio of profits to net worth is not a satisfactory guide for a great deal of the investment in the business may be in the form of long term debt. Thus a ratio of profits to net worth and long-term debts is a better basis for comparison.[4] In some instances also, as in job shops where sellers merely buy parts and assemble the finished equipment, a large volume of business can be done with a very small investment and in such cases the ratio of profits to net worth and long-term debt may not be a satisfactory basis of comparison. This is particularly true where volume expands to the extent where a ratio of profits to net worth comparable to the base period results in a ratio of profits to sales which is not adequate to induce such suppliers (whose product is primarily service) to expand operations.

For practical purposes in deciding whether or not a price increase should be granted in a particular case it is wise to examine the relation of current dollar profits to average base-period profits making adjustments for changes in net worth. The comparative ratios of profits to net worth (which represent the dollar figures expressed in percentages), of profits to net worth and long-term debt, and of profits to sales should also be taken into consideration. In most cases where there are increasing total profits even though the ratio of profits to sales is decreasing price increases are not warranted. However, there are some instances where the reduction of the ratio of profits to sales brings this ratio to a point where producers feel it does not adequately cover risks of continued expansion of production. In such cases price increases may be warranted even though total dollar profits have increased. From the foregoing it is evident that while predetermined rules as to fair-profit standards can be established a qualitative analysis of each case must be made.

Ceiling prices on most commodities and services can be established by means of setting a price applicable to the commodity or establishing a base date and requiring that no seller charge more than he charged on the base date. The latter method obviously will allow different sellers to charge different prices for the same commodity. There are some products, however, for which there are no established prices. To set a dollar and cents commodity price or a base date price is not possible on these types of products. For example, one could not say that a five-story building had any certain price on January 1, 1942. Nor could one say that a Diesel engine or a steam boiler or an elevator which was built for a special purpose had any established price on a specified date.

[4] It should be noted that if the sum of net worth and long-term debt is used as the basis, the net income before deducting interest on the long term debt must be used in the calculations and comparisons.

In machinery industries and in building industries, particularly, specially designed equipment must be produced. In many instances this equipment can be used only for one purpose and no two of the specially designed products are alike. Products of this type may be priced on a "cost-plus" basis or by means of a firm price arrived at on the basis of a standard method of estimating. In either case, if the ordinary method of pricing is to be used producers of specially designed equipment could establish their prices and make their contracts by using current costs and would be at an advantage as compared to the producers of standard equipment which had established prices on a base date or for which a dollar and cents commodity price could be fixed since manufacturers of standard equipment must absorb all increased costs of production.

To control the prices of specially designed equipment it has been necessary to establish a pricing formula which manufacturers of this equipment must use. The regulation controlling the price of machinery which has been issued by the Office of Price Administration contains a formula which is typical of the type that must be used. In applying the formula manufacturers must use " . . . the price-determining method which was in use on October 1, 1941" (the base date), "applying the overhead rate, machine-hour rates, if any, or other bases of computation which were in effect on that date." To the extent that the price-determining method includes or is based on labor and material it is required that the manufacturer shall use the labor rates and material prices which were in effect on the base date.

As was pointed out earlier, once the law is set forth the legal problems involved in administering the law arise in the interpretation and enforcement of the law. In the case of specially designed equipment where the statement of the law is made in accounting terminology and where any enforcement or check on compliance can be accomplished only by using accounting techniques and procedures, the importance of accounting and the close relationship of accounting to the law is evident.

In the case of controlling the prices of "specially designed" products in particular as well as in the other phases of the price stabilization program it is obvious that the basis of the "control" in price control is accounting. This is true in terms of maintaining flexibility in the regulations and making them workable by granting price increases when they are necessary and denying them when they appear to be inflationary. It is also true in terms of justifying and enforcing the regulations and in checking on the compliance of individual concerns.

Before any price regulation is issued a statement of the considerations involved in its issuance must be prepared. In general such a statement contains evidence showing that prices have increased and that continued inflationary pressures are evident. The statement also contains a justification of the equitableness of the regulation by showing that the profits of the industry have increased or are at least "adequate." To administer the ceiling prices properly it is necessary to have an adequate overall picture of the effect which the "ceiling" is having on particular industries. In effect it is the duty of the price administration to see not only that ceiling prices are justified at their inception but that they are "generally fair" and workable in their operation. Therefore it is necessary for the price-control agency to obtain current financial statements—particularly profit-and-loss statements at frequent intervals. It is for this purpose primarily that forms A and B requiring the presentation of financial data were issued by the Office of Price Administration.

As in the case of the Securities and Ex-

change regulation it was found that adequate control could be obtained only if there was a clear picture of the financial condition of businesses. Also, as was the case of the Securities and Exchange Commission, the Office of Price Administration is finding that financial statements improperly prepared or drawn from books and records improperly kept do not form satisfactory bases for comparison or analysis. In its attempt to accomplish its aims the Securities and Exchange Commission has made a conscious attempt to apply and require the use of accepted principles of accounting in the presentation of financial statements.

Because of the nature of the Securities and Exchange legislation the regulations promulgated affect only a limited number of business concerns. Price control on the other hand affects almost all business concerns, large and small, and individual proprietorships and partnerships as well as corporations. Any attempt on the part of price control authorities to regulate or standardize the presentation of financial statements or to require the use of accepted principles of accounting would necessarily have far reaching effects.

In the field of cost determination and cost accounting price control makes necessary the most intensive use of accounting ever utilized in government control of business. While at the present time a great deal of this type of price control is administered by the Army and Navy in their audits of contracts, renegotiation, and price adjustments, the price-control agency utilizes cost accounting in reviewing price-increase requests and in checking compliance with the regulations establishing maximum prices for specially designed equipment.

The very essence of the "pricing formula" which manufacturers of specially designed equipment must use is cost accounting since the "pricing formula," in effect, freezes the price-determining methods of individual business concerns. To check compliance with this sort of a regulation expert cost accountants must be able to analyze the price-determining methods which business concerns used on the "base-date" and then compare their present method of allocating costs with the "base-date" method to see that no price increase has resulted from the use or application of a price-determining method.

Cost accounting is also the basis of determining whether or not an individual business concern should be allowed a price increase on a particular product or group of products. A concern which requests a price increase is required to submit a detailed cost breakdown of the product for which a price increase is requested. Where the product represents only a small proportion of the total business of the concern and where total per-unit costs are covered by the current price and where overall profits are "satisfactory" as compared to base-period profits no price increase can be granted. Where the product represents a large proportion of the concern's business and the low price causes overall profits to be "unsatisfactory," then price increases which allow for total costs plus a "reasonable" amount of profit will be allowed if the goods being produced are "necessary."

In any case where continued production of a good is required and where the manufacturer is not covering his "out-of-pocket" costs, a price increase up to the point where the producer can cover his "out-of-pocket" costs will usually be in order.

It is clear, then, that the decision as to whether or not a price increase can be granted depends upon the unit cost of the product for which the price increase is being requested and the overall profit position of the company. The problem of determining unit costs and the problems involved in determining whether labor, material and overhead have been allocated

properly are, decidedly, cost-accounting problems.

Since the successful operation of the price-control program and the continued smooth functioning of production and the economic mechanism depend so much on the proper handling of requests for price increases, it is important to see that a uniform and reasonable procedure is developed and followed in the handling of price-increase cases. Obviously that means that uniform cost-accounting procedures must be used in determining unit costs of production. This does not mean that all companies must use the same pricing formula nor does it mean that all costs must be based on a particular system of actual or standard cost accounting. Nevertheless certain basic principles must be followed and cost allocations must be based on reasonable and "accepted" standards and must not be arbitrary or capricious.

Thus price control opens a new vista of government control of business by law based and dependent upon accounting. In supervising the allocation of costs and the determination of prices the government steps into the operation of every business, and accounting becomes the mechanism of control.

# GERMAN FINANCIAL MOBILIZATION

A. Henry Ludmer

It is known that Germany's labor, land, production, distribution, consumption, etc., had been reorganized by the Nazi government for war purposes. But it is less known that Germany's capital is entirely mobilized for financing Germany's war machinery, the economic penetration of other countries through foreign trade, the enlarging of her political influence in foreign countries, and, finally, for providing the military and police controls necessary to establish her "New Order" of large-scale robbery, extortion and slavery. Americans should know something about Germany's financial mobilization in order to appreciate more clearly the real character of the enemy in this global war.

According to the German economist, Dr. Joseph Kölble,[1] all German capital must finance the three great battles of "employment, war, and foreign trade" Nazi Germany wants to win. In addition to the financial controls existing in the old democratic Germany, the Nazi government introduced the following methods in an effort to force all capital to work without inflation:

I. If a German industrialist is ordered to produce supplies for Germany's war economy (*Wehrwirtschaft*) or a certain program, he is paid by special drafts (*Sonderwechsel*) due in three to six months or later and having the acceptance clause of the Central Finance Office (*Reichsstelle*) and the promise of rediscount from the Reichsbank. The receivers of these special drafts are under obligation to keep them as long as possible, i.e., as long as they are able to fulfill the order with their own capital. Only when his capital runs out and he has to have additional production capital to finish the governmental orders is the German producer or supplier permitted to present the special draft at his bank, and not at the Reichsbank. The private bank must cash the special drafts as long as it has sufficient reserves to do so. If the bank which works with the producer does not

[1] Joseph Kölble, *Grundzüge der neuen deutschen Wirtschaftsordnung* (*Fundamentals of the new German economic order*), Leipzig 1939, 2nd ed. 1941, p. 79.

have enough, the special draft can be presented at another local bank or savings institution having sufficient funds to finance the desired production.

Only in a very few cases are the special drafts supposed to come to the Reichsbank. In such cases the Reichsbank pays the amounts stated in the drafts by creating new means of payment or credit. Thereby the Reichsbank has become a great creditor of the Reich.[2]

After a year of full production under regular audits, permanent control through cost accountants, readjustments of book values to their "real" status, and other control measures or pressures, the producers might show a cost regression and large profits. These were acquired by the Reich through taxation or bonds, thus securing the means for repurchasing the special drafts. The circle is closed and the credit expansion canceled after having fulfilled the desired task. But it has been stated that by this process a credit expansion of 16.5[3] billions of Reichsmarks was created up to March 11, 1938.

The use of this system is obviously limited by the amounts of reserves of capital, manpower, stocks of raw materials and unused production equipment. Dr. Schacht probably established this system because he knew that at that time there were large private reserves of capital, but not sufficient public ones. As soon as the private and public reserves were fully employed the credit expansion tended to lead to a rise of prices and wages and to a new finance system.

II. The second finance system, which operated mainly from March 11, 1938 to March 20, 1939, discontinued the acceptance of the special drafts, and the large public expenses were covered by taxes and bonds.

In order to obtain a smooth transition from the first system to the second, short-term bills (*Schatzanweisungen, Lieferschatze*) of six months, bearing no interest, were issued, which were to be redeemed by current revenue and were not to be rediscounted at the Reichsbank.

Jews had to pay an immediate contribution of one billion Reichsmarks and equalization fees (*Ausgleichsabgaben*). Later, their property was liquidated or administered, which brought new revenue.

Towards the end of the second finance system, Dr. Schacht, not being a member of the Nazi party, resigned as Minister of Economics and Reichsbank President, and was succeeded by Dr. Walter Funk, an old party man.

III. Dr. Funk installed the "New Finance Plan"[4] on March 20, 1939. It is based on the assumption that the financial demand of the Nazi government will be very great and that it can not be covered only by taxes, bonds, loans, special drafts, etc. The Austrian, Czech, and Jewish owners of foreign exchange, foreign securities, jewels, etc., were ordered to deposit them and they were "purchased" by debiting the frozen or blocked accounts of the owners in the amount of the purchase price as determined by the financial authorities. Jewish property in Germany was estimated officially in *Der Neue Tag* on May 21, 1939 at 8 billions of reichsmarks and at seventeen and a half billions of crowns in Czechoslovakia.[5] These amounts, however, were not sufficient to pay for the expensive war economy.

Additional financial demands were covered by advance payments of future taxes in form of tax bonds (*Steuergutscheine*). Such a finance system, burdening the future generation, is justified, according to Dr. Walter Funk, because the present

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[2] Hjalmar Horace Schacht, *Fundamentals of German Economic Policy*, Berlin, 1938, p. 67.

[3] Kölble, *op. cit.*, p. 80.

[4] *Ibid.*

[5] "Das jüdische Vermögen," *Der Neue Tag*, the official Nazi paper at Prague, May 21, 1939, p. 1.

generation is solving problems for the benefit of future generations. The tax bonds are special but lawful means of payment with a limited issue and a limited purchasing power.

The series of these tax bonds are known to have been issued: *Taxbonds I*, which were accepted as payment of taxes at par after the seventh month of possession, and *Taxbonds II*, which were accepted as payment of taxes only after the thirty-seventh month but then at 112% instead of 100%. Suppliers of the "public hand" had to accept such bonds as payment of 40% of their bills. "Public hand" means the Reich, the Nazi party, the states, districts, communities, public utilities, railroads, post, highway administration, party associations, public corporations as well as all other institutions as determined by the Reichsminister of Finance.[6] The private suppliers or producers who got these taxbonds were entitled to pay 40% of their debts for supplies and services rendered to them with these bonds. The bonds were supposed to be out of circulation as soon as they are used for payment of taxes, customs, fees, and duties.

*Taxbonds I* were not, according to Dr. Funk, to be used for payment of taxes immediately after the seventh month, but kept longer, because only in that way could the Minister of Finance distribute war expenses over decades without overburdening of the public debt. A person keeping the bonds longer than seven months got the advantage of a free valorization of his inventory and a higher deduction in the computation of his tax. A deduction of twenty per cent of the amount of the tax bonds could be made in the tax return for the year when the bonds were issued to him, provided the owner had had them ten months. In the next tax return he could make an additional fifteen per cent deduction, and exporting firms had the right to a special deduction of ten per cent. In order to prevent these bonds from displacing other public securities, the decrease in other securities owned must be deducted from the tax bonds when the computation of the 20% deduction was made. Only exporters whose exports were valued at least 25% of total sales had the right to a special tax credit of ten per cent of the profit, thus reducing and not shifting the tax.[7]

*Taxbonds II* were not used for payment of taxes before the end of the third year and industries and banks were ordered to buy and to sell them. The initial price included is an agio of 12%. They could be used as a means of payment only after the 37th month.

Of course, as soon as these tax bonds were used to pay taxes a decrease of public revenue resulted. This decline, however, was offset by: (a) incomes through invasions; (b) a special income tax, called *Mehreinkommensteuer*[8] of thirty per cent of the amount by which the income of the taxpayer increased above the preceding year; (c) by an increase of regular income taxes; and (d) by direct and indirect capital control and management.

An outflow of capital was made impossible by the *Devisensperre*, enforced by the penalty of death. The supervision of stock exchanges, established on September 30, 1934, was taken over by the Reich in accordance with Hitler's order of December 5, 1934, in order to prevent speculation against the public interest. The Reich's control of savings banks was established on March 14, 1933, mortgage banks on September 28, 1934, and insurance companies on March 5, 1937. Credit institutions are now compelled to report their business transactions (loans) exceeding RM 5,000, to turn in their financial state-

[6] Kölble, *op. cit.*, p. 82.

[7] *Ibid.*, p. 83.

[8] *Ibid.*, p. 84.

ments for approval by the Reichsbank, to observe the orders and instructions of the Reichsbank, and to apply for a permit if the character of their business is changed.

The main supervisors of this direct-capital-control system are the president and vice-president of the Reichsbank, the bank trustee of Hitler, one state secretary of the Ministry of Finance, the Ministry of Economy, the Ministry of Agriculture, and the Ministry of the Interior. Their administrative office is the Inspection Office. Hitler appointed also a Reich Commissioner for credit control who must obey the orders of the Inspection Office. The purpose of this direct capital control is the prevention of hoarding or transfers unfavorable to the war effort.

Indirect capital control has been accomplished by the following means:

(1) The emission of private obligations (*Inhaberschuldverschreibungen*) can be accomplished only with the permission of the Ministry of Economics.

(2) The emission of stocks and industry obligations must be authorized by the Ministry of Economics.

(3) A permanent commission for trade control of unofficial securities was established by Hitler's order of May 25, 1934 to "prevent an untimed burden upon the money-market to preserve them for the greater tasks."[9]

(4) An issue of endorsable paper of credit institutions must first be sanctioned by the Ministry of Economics.

(5) The sharpest indirect control may be found in the Capital Stock Act (*Anleihestockgesetz*) of December 4, 1934, regulating the distribution of profits of corporations. In accordance with 3 and 4 of this act a higher profit than six per cent of the paid-in capital must not be retained. The amount in excess of the six per cent has to be used for the purchase of governmental securities and for that purpose must be transferred to the *Golddiscountbank*. An increase of the capital stock by the issue of new shares must be approved in advance. Permits for new issues were given in some of the occupied countries so that Germans could acquire a majority of the outstanding shares.

(6) Loans by insurance companies can be made only in the public interest.

(7) In accordance with the order of August 12, 1938, banking institutions are forbidden to grant mortgages on new or old buildings except those used for military purposes.

(8) The confiscation of securities in Jewish possession was ordered on December 3, 1938.

(9) In accordance with the order of April 15, 1940, the purchaser of Jewish property must deposit the price difference.[10]

(10) The Reich grants financial help if producers extend their industrial plants for foreign-trade purposes or provide plant improvements important for the war economy.

(11) In some states motor-cars were exempted from taxation in order to induce the purchase of "people's cars."

(12) The Reich guarantees second mortgages on army projects.

(13) By the *Devisen Act* of July 10, 1939 it was forbidden to keep money or securities at home in excess of $50. In order to prevent withdrawals of savings for large commodity purchases, all bank accounts are frozen except that withdrawals of $16.70 from a savings account and $50 from a checking account are permitted in any one month. Inspections are made for hoarded money and goods, the penalty being five to twenty times the amount found, or prison from one to six months.[11]

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[9] *Ibid.*, p. 87.

[10] *Frankfurter Zeitung*, July 15, 1940.

[11] *Verordnungsblatt des Protektorates Böhmen und Mähren*, July 10, 1939.

(14) The *Cartel Control* required a registration of all cartels, pools and other combinations on December 11, 1933, and the examination of their prices on December 10, 1934; it also ordered certain compulsory combinations on March 29, 1935. Every business change of a horizontal, vertical, or circular nature must be licensed by the Ministry of Economics. Business is not allowed to send out estimates; the calculation of prices for public orders is done on the basis of the realistic costs within each plant.

(15) Foreign commodity prices are determined by the so-called *Vergleichszeitsystem*. This involves a base commodity price on October 17, 1936 and fixes the conditions under which these prices may be raised or lowered. In accordance with the order of July 15, 1937 foreign commodities can be resold only at a price which consists of the purchase price and an economically justified profit. Export commodities from Germany are ordered to be sold at any price, if necessary, even far below production costs, the loss being recovered through the so-called export tax from the *Zusatzausfuhrverfahren*. All firms which show a gain from domestic commerce have to pay the export tax to support exporters.

Thirteen kinds of reichsmarks have been provided:[12]

(1) *Free Reichsmarks:* Notes which circulate in Germany.

(2) *Blocked Credit Marks:* Deposits which foreigners have made from the proceeds of sales of German real estate or property other than securities or from the liquidation of credits which foreigners extended to Germans before July 16, 1931.

(3) *Blocked Currency Balances:* Deposits of German notes and coins before July 16, 1931, importation of which is now forbidden.

(4) *Old Balances:* Regular deposits of foreigners which are not subject to any *moratorium*.

(5) *Blocked Emigrants' Balances:* Deposits of persons who established a foreign residence after August 3, 1931.

(6) *Blocked Security Balances* are created from the proceeds of sales or redemption of foreign-owned German securities.

(7) *Special (Administration) Accounts:* The Foreign Exchange Control Board may permit interest, dividends, rents, etc., to be credited to the foreigner up to a "reasonable" amount in special accounts.

(8) *Conversion Balances.*

(9) *Balances* resulting from payment and compensation agreements.

(10) *Askimarks:* Foreigners' Special Accounts for payments in Germany, e.g., for transit merchants.

(11) *Clearing Balances* resulting from clearing agreements.

(12) *Registered Balances* created under the so-called standstill agreement.

(13) *Trust Accounts:* Noninterest-bearing Reichsmark Trust Account Balances or Travelers' Accounts.[13]

Separate markets have developed in the different marks. If the discount on a particular group increased at a time when Germans did not want an increase, additional uses were assigned to the category, thus making it effective over a wider market and reducing the discount. Foreign-exchange rates of course no longer afford any indication of Germany's financial status.

The War Emergency decree of September 4, 1939 imposed a 50% surtax on incomes, a 20% increase in beer and tobacco taxes and higher contributions of states and municipalities to the Reich. Revenues increased from 6,800,000,000 RM in 1933 to

[12] Karl R. Bopp, *Hjalmar Schacht—Central Banker*, University of Missouri Studies, January 1, 1939, pp. 29–30.

[13] *Ibid.*

23,600,000,000 in 1939. State Secretary Reinhard has estimated the total revenue for 1942 at 40 billion RM, or 35% of the national income. Adding to this another 10% derived from levies of local governments and the "voluntary" contributions such as "People's Cars" and "Winter Help," the financial burden on the German people is very heavy and probably cannot be further increased. In order to meet the 55% of war expenditures not covered by taxes and other sources, Germany increased her debt by 38 billion marks in 1940. The official expenditures for the 18 months from July 1939 to December 1940 were 83,243 million RM, while the expenditures from April 1933 to March 1939 were 86,875 millions. In 1938–1939 these expenditures stood at 29,288 millions, in 1939–1940 at 47,963 millions, and in 1940–1941 at 68,700 millions. In 1940 borrowing was estimated at 35,124 millions, or 56% of the expenditures.[14]

Total wartime savings up to December 31, 1940 amounted to eight billions, bringing the total savings deposits to thirty billions of reichsmarks; the only investments open for banks are governmental bonds. The bonds increased from 98.9 in September 1939 to 101.4 in December 1940 and 103 in April 1941, while the interest rate dropped from 5% to 4% and then to 3.5%.[15]

According to the Reichsbank's official statement, circulation of its notes increased from 8,980,000 on July 31, 1939 to 16,030,000,000 in July 31, 1941, including 1,600,000,000 reichmarks or 70%.[16] The Reich's indebtedness was stated to be ninety billion RM on March 31, 1941, but it increased during 1941 by 42,400 millions and probably doubled in 1942. After 1933, but especially during the war, Germany developed the system of clearing and barter agreements already described and could acquire commodities on her own terms. Having her capital market under complete control and unlimited funds available, she could pay the highest prices, if it became necessary to beat other countries in foreign trade. The financial contributions of the now occupied countries are estimated by R. A. Butler, British Undersecretary for Foreign Affairs, at $4,600,000,000 a year.[17] Thereby Germany extended the financial limits upon her capacity to carry on this war from her own economy to the economic organizations and resources of the entire European continent.

The funds Germany has obtained by the financial measures just described were used not only for war purposes, but also for economic penetration of other countries through foreign trade, for export-aids and higher import prices, and for helping her foreign-trade organizations to prepare further economic, political and military threats and attacks.

[14] *New York Times*, June 8, 1941, Statist, April 26, 1941, p. 364.

[15] *New York Times*, March 13, 1941, p. 2.

[16] *Federal Reserve Bulletin*, September 1940, p. 944.

[17] Hettlage F., *Deutscher Volkswirt*, 1940, p. 475.

# THE ACCOUNTING EXCHANGE

### PRESENTING THE THEORY OF DEBIT AND CREDIT

Mastery of bookkeeping is fundamentally a development of the ability to decide which accounts should be debited and credited in the recording of transactions. Analysis of this type must precede recording. Since this concept is fundamental to all bookkeeping and accounting, it is important that it be introduced early in every bookkeeping course in such a manner that it will be thoroughly mastered. The difference between a $20-a-week bookkeeper and the much higher salaried auditor is largely in the ability to analyze accounting data. The most common weakness of students from high-school bookkeeping classes that enroll in our beginning accounting course is their lack of ability to analyze. Their handicap seems to be that though they know something of the "how" of bookkeeping, they do not seem to understand the "why" and thus lack ability to do accounting; for they are not able to deal with new or unusual situations. They need more definite, purposeful training in transaction analysis.

My own feeling is that the first task of accounting teachers is to simplify the presentation of the concept of debit and credit so that students may master this basic principle from the beginning of the course.

It was my privilege some four years ago to be research assistant under Dr. Blackstone at the State University of Iowa. My project was to read available dissertations on the subject of bookkeeping and accounting. Some dozen of these studies contained information dealing with the approach to bookkeeping. One writer, after observing for about three weeks the achievements of three classes, each studying a different approach, arbitrarily concluded that no class should ever be permitted to study by the general-journal approach. I shall not here attempt a review of the studies dealing with the subject, but I became convinced of the need for additional objective experimentation.

Some years ago I prepared a group of chapters in mimeographed form for introducing the study of accounting in my own classes at Iowa. Available facilities were utilized for developing another approach which was of the balance-sheet type. Several others coöperated in testing experimentally the two approaches to the subject. At the end of the year, there was evidence that both of them could be improved. To that end the materials dealing with the general-journal approach were discarded and another plan for presenting the theory of debit and credit was developed. Several teachers again coöperated in testing the materials experimentally in their classes by using the balance-sheet approach with one group, and at the same time the other procedure with another group. An experiment of that type, to be valid, should be the result of the work of several teachers, in order, among other things, to overcome any bias that one or more teachers might have to any particular procedure.

You will thus observe that several teachers coöperated in experimenting with three plans for presenting the theory of debit and credit. I shall not here attempt to give objective data in comparison of the the methods; but suffice to say that the plan, which is soon to be outlined, was decidedly superior as shown by results obtained by those teaching the various plans under consideration. In practically all tests given the various groups, the poorer students who had learned by the plan which is here referred to as the analysis plan

made test-scores at least as good as equivalent students studying by other plans. Among average students those studying by the analysis plan exceeded others by an average of about 5%; and with better students, the scores of those studying the analysis plan were definitely higher. The outcome satisfied us as to the superiority of the analysis approach over the others used in the experiments.

No claim is made for originality in this scheme of study, but I shall be especially interested in reaction of other teachers to it. One of the principal differences is in the sequence of presentation. Classes are taught to analyze transactions before they make any formal accounting records or statements.

Experience as a teacher of mathematics before I taught accounting makes me aware of the similarity of the reasoning often utilized in the two fields. In my procedure the mathematical equations found in some texts are not used. It is my feeling that the explanations can be presented more effectively without the aid of too many equations and signs, a practice which is objectionable to some students. The more nearly the subject can be presented from the first in the way it is finally to be used, the less effort is wasted in useless learning procedures. The use of such terms as increases and decreases, debits and credits, left and right is quite sufficient to explain the principles of debit and credit.

In the materials here referred to as the analysis approach, so called because of the way the theory of debit and credit is presented, the first chapter is used as a means of acquainting students with the purpose, development, and some of the terminology of accounting, with but brief reference to the preparation of records by the double-entry method. Such records and statements are first prepared in connection with later chapters.

The second chapter contains the development of the theory of debit and credit. This is begun by using terminology with which the student is already familiar, because most of the students who take beginning accounting have no previous training in the terminology and procedure of the subject. Why not meet the student on his own ground? Transactions involving cash and the exchange of assets may be introduced first. Students first use the terms *value received* and *value parted with* because they already have an understanding of these terms. One or two class periods may be sufficient to establish this concept of exchange. The opportunity is used to stress that in every business transaction there is equality of value received and value parted with. This is illustrated by some such statement as: If one purchases a book at a cost of $2.00 he does so because he feels that the book will be worth as much to him as will the $2.00 he gives in exchange of it. This is the introduction of the procedure for stressing the equality of debit and credit. This equality is stressed by writing on the board *The value received MUST ALWAYS EQUAL the value parted with.* When the terms debit and credit are introduced it is but necessary to insert them into the statement in place of value received and value parted with, leaving the other terms as already written. We are then ready to state that a value received is recorded by the bookkeeper as a debit; and a value parted with, as a credit. The terms value received and value parted with are then discarded as having been used as a temporary teaching device—a bridge, if you please, to get the process started in terms with which the student is already familiar.

DEBIT AND CREDIT. With a little drill on terminology the students are ready to use the terms *debit* and *credit* involving the exchange of assets. They are then prepared to arrive at a generalization—*increases in*

*assets are recorded as debits and decreases, as credits.* Inductive reasoning has been utilized because this generalization is being taught by example rather than memory. The plan of teaching transaction analysis before the class attempts to record transactions or make statements by the double-entry method is now under way. With sufficient oral drill on this procedure so that the majority are able easily to handle transactions involving the exchange of assets, another type of transaction may be introduced.

PURCHASES ON ACCOUNT. The next step deals with the purchase of assets on account—resulting in increases of assets and of liabilities. The concept that in each transaction there must be equality of debits and credits has previously been developed. There will be an increase in the total assets and in the total debts of the business as a result of a purchase of an asset on account. Students are already aware that increases in assets are debits; and since the credit is not to be an account, no asset being decreased by this transaction, it must be made in some other name. The class is prepared for the concept that in order to maintain equality of debits and credits in a transaction of this type, there must be a credit to a liability account. After some practice on transactions involving the purchase of assets (or services) on account, the generalization that increases in liabilities are recorded as credits may be presented.

PAYMENTS ON ACCOUNT. Transactions involved in paying debts may next be introduced. A few well-worded questions make it possible for the students to see that a transaction of this type results in a reduction both of an asset and of a liability. They already know that a reduction of an asset is recorded as a credit, so they easily conclude that in order to maintain equality of debit and credit, there must be a debit to record the deduction of the amount of the liability. With the analysis of a few such transactions they conclude that decreases in liabilities are debits; and, completing the concept—*increases in liabilities are recorded as credits; decreases, as debits.* Sufficient oral drill should be used to establish the concept in the minds of the students.

CAPITAL. It is but logical that the next step should be that of transactions involving capital. Our own experience is that this can best be introduced by asssuming that there is a simple entry which involves a cash investment to start the business, and then build up to the situation where the business may be organized in other forms and accept several liabilities and several assets. Students know that when assets are received there are debits. The business, being organized, does not part with other assets (at least in amounts equal to these accepted), nor does it incur liabilities at least in amounts equal to the assets received. The credit must be to some other account to maintain equality of debit and credit. This affords the opportunity to teach that the owner's interest is recorded as a credit. The class then with some practice concludes that increases in capital are recorded as credits; and thus, decreases, as debits.

INCOME AND EXPENSE. This principle is readily applicable to the handling of transactions involving income, for our students are taught that income is a temporary capital account. Thus increases in income are recorded as credits. This concept may also be developed by showing that there is a debit to the asset received and a credit to some other account to which we give the title *income*. If a service business is being dealt with, there is no asset decrease and no liability involved, so to the service rendered we give the title income. If a merchandising business is involved it is only necessary to explain that the merchandise is parted with or sold and thus a

credit arises in the merchandise sales account.

As in other similar situations, decreases are recorded as debits. Since expenses are just the reverse (capital deductions) then increases in expenses are debits; decreases, credits. In the case of wages paid in cash one may also present the concept by showing the credit to cash in exchange for services to which the name *expense* is given; thus a debit to expense and a credit to cash.

One of the laws of learning which is often referred to is the law of exercise. So far our work on the theory of debit and credit has all been oral, with no reference to formal accounting records. Mental patterns should be established before students attempt to record transactions or make statements. If mental patterns are correct they will likely produce accurate written patterns; but with wrong mental patterns correct written patterns are impossible. The time to correct the patterns is while the mental concept is being formed; not after it has become established practice.

TEST. For a teaching device to determine the extent to which students understand the concepts, one may prepare an exercise or two for them to write; but as yet they are not ready to prepare formal accounting records. The exercise is arranged similar to the following pattern:

INSTRUCTIONS: Below are several transactions. In the columns at the right indicate the titles to be debited and those to be credited. In actual practice this analysis is always a mental process, but as a teaching device this is for you to show your ability to analyze transactions. The first line is given as an illustration.

| | Title debited | Title credited |
|---|---|---|
| 0. Paid salaries for the week.. | Salary expense | Cash |
| 1. Paid cash for equipment.... | | |
| 2. Purchases supplied on account from Jordan & Co..... | | |
| Etc. Etc. | | |

Before the introduction of formal recording activities, we deal with special and general journals, explaining the purpose of each journal and the types of transactions recorded in each. The class is taught that transactions for which no special journal is provided or which cannot be completely handled in the special journals are recorded in the general journal. For a cash-receipts journal we mention that writing *cash receipts* or *cash debit* across the top of the page or column is equivalent to saying that every amount so entered involves a debit to cash and a credit to the title named on the line of entry. A similar explanation is offered for each of the other special journals. A test plan similar to that just illustrated is followed but with an additional column to indicate which journals are used in recording the transactions. When students are able to determine what titles are debited and credited and what journals are employed in the recording of a particular group of transactions, they may begin their formal double-entry records. May I repeat for emphasis—we try to see to it that correct mental patterns are established before we permit students to produce written patterns. Their written exercises will be no more correct than their mental pictures. Every member of the class has an opportunity to know whether his analysis is correct before he attempts his first formal records. He has an opportunity to make any corrections in the text he has prepared on the group of transactions. He can then refer to these data as he makes the entries.

OTHERS' VIEWS. Littleton has said that Thomas Jones used the plan of increases and decreases in a book that was published in 1841. A number of current texts contain an analysis of this type, but usually after several chapters have been presented; for example, Paton devotes several pages of his *Essentials of Accounting* to an analysis of this type, but his discussion is deferred

to Chapter IV. My own feeling is that the balance sheet is often introduced too early in the course for it to be thoroughly understood at that stage. A large firm that employs several bookkeepers will likely leave the work of financial-statement preparation to a senior member of the staff. When a bookkeeper begins work for a firm there is little likelihood that he will start with the preparation of a balance sheet. Even if he did there is plenty of time before he completes the course to learn this.

SUMMARY. It has been my purpose to stress certain points, namely:

1. The success of the accountant on the job depends largely upon his ability to analyze.
2. Analysis of debit and credit is a mental process that should precede all other formal steps in bookkeeping and accounting because it is fundamental to all others.
3. Because of its importance debit and credit analysis should be taught the student BEFORE other accounting processes are presented; for only *after* this fundamental process is fully understood is the student mentally prepared to get the most from the study of other concepts.

May I repeat for emphasis, that in my opinion transaction analysis should precede all other accounting instruction. Correct written work must be based on correct mental patterns. Correct mental patterns can best be established by early and continued drill in the ability to analyze.

EARL CLEVENGER

## THE USE OF DETERMINANTS IN THE SOLUTION OF SYSTEMS OF LINEAR EQUATIONS

Most problems arising in accounting practice which require the determination of two or more mutually dependent quantities can be most simply stated as systems of linear equations. In these systems, the number of equations is always the same as the number of unknown quantities.

### *Two Unknowns*

When there are two unknowns, the equations may be written as follows:

$$ax+by=e \tag{1}$$

$$cx+dy=f. \tag{2}$$

The letters $a$, $b$, $c$, and $d$ represent the known coefficients; $e$ and $f$ represent the known quantities; while $x$ and $y$ are the two unknown quantities to be determined.

If we multiply both sides of equation (1) by $d$, and multiply both sides of equation (2) by $b$, we obtain

$$adx+bdy=ed \tag{3}$$

$$cbx+bdy=fb. \tag{4}$$

Subtracting (4) from (3), there results

$$(ad-cb)x=(ed-fb),$$

or

$$x=\frac{(ed-fb)}{(ad-cb)}\cdot \tag{5}$$

Similarly, if we multiply both sides of equation (1) by $c$, and multiply both sides of equation (2) by $a$, we obtain by subtraction

$$y=\frac{(af-ce)}{(ad-cb)}\cdot \tag{6}$$

Now, by definition, the determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$ is another form of writing $(ad-cb)$, and $(ad-cb)$ is the expansion of the determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$. In general, the expansion of a determinant of the second order (two rows and two columns) is simply the product of the elements lying on the diagonal passing from the upper left corner to the lower right corner of the square, less the product of the elements lying on the diagonal passing from the lower left corner to the upper right corner.

So, using determinants, equation (5) becomes

$$x=\frac{\begin{vmatrix} e & b \\ f & d \end{vmatrix}}{\begin{vmatrix} a & b \\ c & d \end{vmatrix}},$$

and equation (6) becomes

$$y=\frac{\begin{vmatrix} a & e \\ c & f \end{vmatrix}}{\begin{vmatrix} a & b \\ c & d \end{vmatrix}}.$$

Comparing this solution with the equations (1) and (2), we find that the solution of any system of linear equations containing two unknowns can be immediately written in the form of determinants, provided the equations are so arranged that corresponding unknowns are in the same columns in the left-hand sides of the equations, and the known quantities are placed in the right-hand sides. The denominator determinant is the same for both unknowns, and is formed by writing the coefficients of the unknowns in the same order in which they appear in the equations; the numerator, for any unknown, is formed from the denominator by replacing the column of coefficients of this unknown by the column of known quantities.

### *Problem One*

Let us examine the first problem stated in the article "Why Use Algebra" by Lee Perkins, in the September, 1942, issue of *The Journal of Accountacy.*

"The net income of a corporation, before state and Federal income taxes, was \$28,472.04. The state tax rate was 4 per cent on income after Federal taxes, but without deduction for state income taxes. The Federal tax was 13½ per cent on the first \$5,000, 15 per cent on the next \$15,000, 17 per cent on the balance, plus 10 per cent of the total at the first three rates—all on income after deduction of the state tax."

Using the following abbreviations:

$S$—State income tax,
$F$—Federal income tax,

the equations are:

$$S= .04(28{,}472.04-F)$$
$$F=1.1[2{,}925.00+.17(28{,}472.04-20{,}000.00-S)].$$

Simplifying and rearranging,

$$S+.04F=1{,}138.88,$$
$$.187S+\quad F=4{,}801.77.$$

Solving,

$$S=\frac{\begin{vmatrix} 1{,}138.88 & .04 \\ 4{,}801.77 & 1.00 \end{vmatrix}}{\begin{vmatrix} 1.00 & .04 \\ .187 & 1.00 \end{vmatrix}}=\frac{1{,}138.88-192.07}{1.00-.00748}$$

$$=\frac{946.81}{.99252}=953.95,$$

$$F=\frac{\begin{vmatrix} 1.00 & 1{,}138.88 \\ .187 & 4{,}801.77 \end{vmatrix}}{.99252}=\frac{4{,}801.77-212.97}{.99252}$$

$$=\frac{4{,}588.80}{.99252}=4{,}623.38.$$

### *Problem Two*

The second problem stated in the above mentioned article requires the determination of four unknowns. By two simple substitutions, however, the three bonuses can be combined, thus reducing the number of unknowns to two. Basically, it is this characteristic of the problem which accounts for its easy solution by trial and error.

The problem, as stated, follows:

"Net income before Federal income and profits taxes and the bonuses is \$200,000.

"General manager, $A$, is to get 10% of net income after taxes, after \$6,000 preferred dividends, and after all other bonuses except his own.

"Sales manager, $B$, is to get 5% of net income after Federal taxes, no dividend deduction, but before depreciation of \$4,000, and before any bonuses.

"President, $C$, is to get 3% of net income after all bonuses, including his own, but before Federal income and excess-profits taxes and with no deduction for dividends, and no adjustment on account of depreciation.

"The Federal-tax rates used in the solution are those in effect for 1940, and with no declared value excess-profits tax, and with an excess-profits credit of \$110,000 on the income method."

Using the following abbreviations:

$A$—General manager's bonus,
$B$—Sales manager's bonus,
$C$—President's bonus,
$D$—Total bonuses,
$F$—Federal income and excess-profits taxes,

the equations are:

$$A=.10(200{,}000.00-6{,}000.00-B-C-F),$$
$$B=.05(200{,}000.00+4{,}000.00-F),$$
$$C=.03(200{,}000.00-D),$$
$$F=.24(200{,}000.00-D)$$
$$+.25[(200{,}000.00-D)$$
$$-.24(200{,}000.00-D)-115{,}000.00].$$

Simplifying,

$$A=19{,}400.00-.10B-.10C \qquad -.10F \quad (1)$$
$$B=10{,}200.00 \qquad -.05F \quad (2)$$
$$C=\ 6{,}000.00 \qquad -.03D \quad (3)$$
$$F=57{,}250.00 \qquad -.43D. \quad (4)$$

Substituting in (1) the values of $B$ and $C$ as given in (2) and (3),

$$A=17{,}780.00 \qquad +.003D-.095F. \quad (5)$$

Adding (2), (3), and (5),

$$D=33{,}980.00 \qquad -.027D-.145F. \quad (6)$$

Rearranging (6) and (4),

$$1.027D-.145F=33{,}980.00 \quad (7)$$
$$.43\ D+\qquad F=57{,}250.00. \quad (8)$$

Solving (7) and (8),

$$D=\frac{\begin{vmatrix} 33{,}980.00 & .145 \\ 57{,}250.00 & 1.000 \end{vmatrix}}{\begin{vmatrix} 1.027 & .145 \\ .43 & 1.000 \end{vmatrix}}$$

$$=\frac{33{,}980.00-8{,}301.25}{.96465}=26{,}619.76$$

$$F=\frac{\begin{vmatrix} 1.027 & 33{,}980.00 \\ .43 & 57{,}250.00 \end{vmatrix}}{.96465}$$

$$=\frac{58{,}795.75-14{,}611.40}{.96465}=45{,}803.50.$$

Substituting these values of $F$ and $D$ in equations (2) and (3),

$$B=7{,}909.82$$
$$C=5{,}201.41.$$

Then, from (1),

$$A=13{,}508.53$$

### *Three Unknowns*

When there are three unknowns, the system of linear equations may be written as follows:

$$ax+by+cz=j$$
$$dx+ey+fz=k$$
$$gx+hy+iz=l.$$

The letters $a, b, \cdots, i$ represent the known coefficients; $j$, $k$, and $l$ represent the known quantities; while $x$, $y$, and $z$ are the unknown quantities to be determined.

We can write the solution in the form of determinants by using the same method explained under the heading "Two Unknowns":

$$x=\frac{\begin{vmatrix} j & b & c \\ k & e & f \\ l & h & i \end{vmatrix}}{\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}},\qquad y=\frac{\begin{vmatrix} a & j & c \\ d & k & f \\ g & l & i \end{vmatrix}}{\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}},$$

$$z=\frac{\begin{vmatrix} a & b & j \\ d & e & k \\ g & h & l \end{vmatrix}}{\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}}.$$

The expansion of these determinants of the third order is explained by the following example:

$$\begin{vmatrix} a & b & c \\ d & e & f \\ g & h & i \end{vmatrix}\begin{matrix} a & b \\ d & e \\ g & h \end{matrix} = aei+bfg+cdh-gec-hfa-idb.$$

Here we have repeated the first and second columns after the determinant; then formed the products of the elements lying on lines parallel to the diagonals of the original square. The products formed from elements which lie on lines descending from left to right have the positive sign, the other products the negative sign. In practice, it is not necessary to repeat the first and second columns, but only to imagine them repeated.*

### *Problem Three*

Let us return to the first problem and introduce a bonus of 5% of the net income after state and Federal income taxes. A solution by trial and error now becomes tedious.

Using the abbreviations:

$B$—Bonus,
$S$—State income tax,
$F$—Federal income tax,

the equations are:

$$B= .05(28{,}472.04-S-F),$$
$$S= .04(28{,}472.04-B-F),$$
$$F=1.1[2{,}925.00+.17(28{,}472.04-20{,}000.00-B-S)].$$

Simplifying and rearranging,

$$B+.05\,S+.05F=1{,}423.60$$
$$.04\,B+S+.04F=1{,}138.88$$
$$.187B+.187S+F=4{,}801.77.$$

Solving,

$$B=\frac{\begin{vmatrix} 1{,}423.60 & .05 & .05 \\ 1{,}138.88 & 1.00 & .04 \\ 4{,}801.77 & .187 & 1.00 \end{vmatrix}}{\begin{vmatrix} 1.00 & .05 & .05 \\ .04 & 1.00 & .04 \\ .187 & .187 & 1.00 \end{vmatrix}}=\frac{1{,}423.60+9.60+10.65-240.09-10.65-56.94}{1.00+.000374+.000374-.00935-.00748-.002}$$

$$=\frac{1{,}136.17}{.981918}=1{,}157.09$$

$$S=\frac{\begin{vmatrix} 1.00 & 1{,}423.60 & .05 \\ .04 & 1{,}138.88 & .04 \\ .187 & 4{,}801.77 & 1.00 \end{vmatrix}}{.981918}=\frac{1{,}138.88+10.65+9.60-10.65-192.07-56.94}{.981918}$$

$$=\frac{899.47}{.981918}=916.03.$$

---

* This explanation is essentially the one given by L. G. Weld in his *Theory of Determinants*.

The amount of the Federal income tax can be determined by solving for $F$ in like manner, or as follows:

| | | |
|---|---|---|
| Net income before bonus and income taxes | | $28,472.04 |
| Deduct—bonus............ | $1,157.09 | |
| —state income tax... | 916.03 | 2,073.12 |
| | | $26,398.92 |
| Federal income tax: | | |
| $ 5,000.00 at 13½%.................. | | $ 675.00 |
| 15,000.00 at 15%.................. | | 2,250.00 |
| 6,398.92 at 17%.................. | | 1,087.82 |
| | | $ 4,012.82 |
| Plus 10%........................ | | 401.28 |
| | | $ 4,414.10 |
| Proof: | | |
| Net income before bonus and income taxes | | $28,472.04 |
| Deduct—bonus............ | $1,157.09 | |
| —federal income tax. | 4,414.10 | 5,571.19 |
| | | $22,900.85 |
| State income tax—$22,900.85 at 4%..... | | $ 916.03 |

### *Four or More Unknowns*

For those who are familiar with the properties of determinants and are accustomed to handling determinants of the fourth and higher orders, they often provide the simplest solution of problems requiring the determination of four or more unknowns. For most of us, however, it is probably simpler to eliminate one or more of the unknowns by the ordinary methods of substitution, multiplication and addition, or multiplication and subtraction. After the number of equations has been reduced to two or three, determinants can often be used advantageously. Problem Two is an example.

### *Problem Four*

Many complicated problems can be easily solved by means of a chain of simple substitutions. Let us consider the one solved by trial and error, in the article by Albert L. Norris on pages 164–167, February, 1942, issue of *The Journal of Accountancy*.

Using the following abbreviations:

$B$—Bonus,
$S$—State income tax,
$D$—Declared value excess profits tax,
$N$—Normal Federal income tax,
$E$—Excess profits tax,
$F$—Total Federal taxes,

the problem can be stated as a system of linear equations as follows:

$$B=1{,}500.00+.10(49{,}066.33-S-F),$$
$$S=\ .055(66{,}347.77-B),$$
$$D=\ .066(22{,}106.33-B-S),$$
$$N=\ .24(72{,}106.33-B-S-D),$$
$$E=\ .25(35{,}337.94-B-S-D-N).$$

Simplifying,

$$B=\ 6{,}406.63-.10\ S-.10\ F \qquad (1)$$
$$S=\ 3{,}649.13-.055B \qquad (2)$$
$$D=\ 1{,}459.02-.066B-.066S \qquad (3)$$
$$N=17{,}305.52-.24\ B-.24\ S-.24D \qquad (4)$$
$$E=\ 8{,}834.49-.25\ B-.25\ S-.25D-.25N. \qquad (5)$$

Substituting in (3) the value of $S$ as given in (2),

$$D=1{,}218.18-.06237B. \qquad (6)$$

Substituting in (4) the values of $S$ and $D$ as given in (2) and (6),

$$N=16{,}137.37-.2118312B. \qquad (7)$$

Substituting in (5) the values of $S$, $D$, and $N$ as given in (2), (6), and (7),

$$E=3{,}583.32-.1676997B. \qquad (8)$$

Adding (6), (7), and (8),

$$F=20{,}938.87-.4419009B. \qquad (9)$$

Substituting in (1) the values of $S$ and $F$ as given in (2) and (9),

$$B=3{,}947.83+.04969009B,$$

or, $$B=4{,}154.26.$$

Substituting this value of $B$ in (2), (6), (7), and (8),

$$S=\ 3{,}420.64$$
$$D=\quad 959.07$$
$$N=15{,}257.36$$
$$E=\ 2{,}886.65.$$

L. W. Coleman, Jr.

# PROFESSIONAL EXAMINATIONS

## A Department for Students of Accounting

Henry T. Chamberlain

The following problems were presented by the Board of Examiners of the American Institute of Accountants as the first half of the November, 1942, C. P. A. Examination in accounting theory and practice. The weights assigned were: problem 1, 18 points; problem 2, 12 points; problem 3, 20 points. The time allowed to solve all problems was six hours. A suggested time schedule follows:

| | |
|---|---|
| Problem 1 | 90 minutes |
| Problem 2 | 60 minutes |
| Problem 3 | 90 minutes |

*No. 1*

The Lasko Mining Company is engaged solely in processing all the ore taken from its own mine into a concentrate called "Oxylite" and selling it to refineries.

The books show the following inventories on hand at the beginning and end of the year:

| | *January 1* | *December 31* |
|---|---|---|
| Raw ore | 50,000 tons | 20,000 tons |
| Partly processed ore | 5,000 " | 15,000 " |
| Oxylite | 25,000 " | 5,000 " |

Raw ore was carried at $4 and $4.345 per ton at the beginning and end of the year, respectively, which values were described as "annual average market prices." Ore produced at the mine—200,000 tons—had likewise been charged to mining costs throughout the year at $4.345 per ton and corresponding credits aggregating $869,000 had been made to a separate "earnings" account.

Partly processed ore was inventoried respectively at $4.40 and $4.7795 per ton, being 10% above the ore values. During the year 20,000 tons of ore were lost in the final stages of the reducing processes.

Costs per ton of materials in the opening inventories were found to be as follows:

| | |
|---|---|
| Raw ore | $1.0428 |
| Partly processed ore | 1.27 |
| Oxylite | 4.328 |

It was agreed that partly processed ore in both opening and closing inventories had passed through about one tenth of the reduction processes and should therefore be carried at a cost per ton equalling the cost of raw ore plus one tenth of the cost per ton of processing.

Oxylite was carried at $8.39 per ton, a value that was derived from a formula established many years ago and used ever since in pricing the stock on hand.

Mining expenses, including depletion, were $198,900 and the expenses of the reducing plant $629,850, including depreciation. Both amounts had been charged to reducing-plant expenses.

Because of the foregoing arbitrary methods the books did not show acceptable costs and values. It was accordingly decided to restate the current year's accounts and show proper costs and inventory values, all on the first-in, first-out plan.

The sales of oxylite aggregated $1,168,200.

From the foregoing data prepare a comparative statement of mining and reducing costs, cost of sales and gross profit, following (a) the company's and (b) the revised method; each method showing computations of aggregates and unit costs. Also comment upon the company's inventory valuation methods.

*No. 2*

The following is the summary of an account called "Treasury Stock," the bal-

ance of which appears as an asset in the amount of $37,256 on the June 30, 1942, consolidated balance sheet of "Apex Company":

| | Date | Explanations | Debit | Credit |
|---|---|---|---|---|
| (a) | 1- 4-32 | Capital stock of "Apex, Inc." (predecessor company, dissolved after reorganization on 1-4-32) | $ 5,000 | |
| (b) | 1- 4-32 | All of the capital stock of "Apex, New York," a wholly owned distributor subsidiary, established in 1925 | 15,200 | |
| (c) | 1- 4-32 | 140 shares of common stock, acquired at par and reserved for management bonuses; 40 shares were issued in 1935 and 53 shares in 1939, leaving 47 shares on hand | 14,000 | |
| (d) | 5-31-34 | 38 shares of preferred stock ($100 par), repurchased from company's vice president at $115 per share; orginally purchased by him in 1932 at the issue price of $103 per share | 4,370 | |
| (e) | 12-15-37 | 276 shares of common stock repurchased in open market at 35 | 9,660 | |
| (f) | 12-31-40 | 25½ shares common, representing fractional shares remaining undistributed from a stock dividend; aggregate par value | | $ 2,550 |
| (g) | 2- 1-41 | Sales for cash of 81 shares of common stock repurchased in 1937 at 104 | | 8,424 |
| | 6-30-42 | Balance | | 37,256 |
| | | | $48,230 | $48,230 |

Comment briefly on each of these items, explaining what corporate action should have been taken, what additional information would be required before disposing of them, and how the account should be adjusted and the amounts shown in the balance-sheet. The answer should be in narrative form and no figures need be cited.

*No. 3*

Parathon Distributing Company is a wholly owned subsidiary of Paragon Mills, Inc., and was organized in 1938 as the western outlet of its parent. Most of the capital necessary for establishing the subsidiary was derived from an issue of 4½% income bonds, dated July 1, 1938, interest payable annually on January 1. The bond indenture provides as follows:

"Commencing with the calendar year 1941 Paragon guarantees that the net earnings of Parathon shall be not less than 200% of the interest falling due on this issue each year. 'Net earnings' are hereby defined to mean the excess of cash received over cash disbursed before interest deductions. Paragon further guarantees that if bonds of this issue are outstanding at the end of any calendar year, the value, not exceeding market, of the net tangible assets of Parathon shall not be less than 150% of all Parathon's funded debt. Parathon shall, upon determining the existence of either or both these deficiencies, bill Paragon for the total amount thereof and shall adjust its balance-sheet in such a manner as to reflect such guarantees. Paragon shall pay the billed amount to Parathon within a period not greater than 30 days after the date of such billing."

The following trial balances of Parathon are submitted:

| Debits | December 31, 1940 after closing | December 31, 1941 before closing |
|---|---|---|
| Building and equipment, at cost | $235,100 | $ 242,600 |
| Inventories, at cost | 22,940 | 89,434 |
| Customers accounts | 246,510 | 302,496 |
| Cash | 252,465 | 183,522 |
| Unamortized debt discount | 25,000 | 23,000 |
| Dividend paid | — | 15,000 |
| Merchandise sold (purchased from Paragon) | — | 1,885,286 |
| Operating expenses | — | 868,318 |
| Depreciation expense | — | 12,581 |
| Bad debts | — | 31,040 |
| Property and income taxes | — | 8,905 |
| Interest expense | — | 22,500 |
| Amortized debt discount | — | 2,000 |
| | $782,015 | $3,686,682 |

| *Credit* | | |
|---|---|---|
| Accounts payable for operating expenses | $131,000 | $ 126,886 |
| Accrued taxes | 37,767 | 12,189 |
| Accrued interest | 11,250 | 22,500 |
| Reserve for depreciation | 15,238 | 23,647 |
| Reserve for bad debts | 8,500 | 36,200 |
| Common capital stock | 10,000 | 10,000 |
| Income bonds (due July 1, 1953) | 500,000 | 500,000 |
| Earned surplus | 68,260 | 68,260 |
| Sales | — | 2,887,000 |
| | $782,015 | $3,686,682 |

Additions to buildings and equipment as shown by the books totaled $14,200 for the year. Certain building improvements amounting to $2,428 were also made during the year but were erroneously charged to operating expenses. Equipment costing $6,700 had been retired, $4,172 depreciation had accrued thereon, and property account as well as the reserve for depreciation had been properly adjusted.

Prior years' bad debts written off in 1940 were recovered in 1941 to the amount of $1,260 which was credited to the reserve, and of the 1940 customers accounts $4,600 were charged off. All remaining 1940 balances were collected.

The market value of the opening inventory exceeded cost; the closing inventory was carried at $22,510 in excess of market.

The trustee of the bonds has called for a statement of Parathon's financial position.

Prepare:

(a) Parathon's balance-sheet of December 31, 1941, adjusted in accordance with the terms of the bond indenture.

(b) A summary of Parathon's receipts and disbursements in 1941, showing computations.

(c) A computation of the amount to be refunded by Paragon under the terms of the indenture.

(*See next page for solutions to Problems*)

## *Solution to Problem 1*

(a)

*The Lasko Mining Company*
*Comparative Cost of Sales and Gross Profit*
*Year Ending December 31, 1941*

| | *Number of Tons* | *Per Company's Method* *Per Unit* | *Total* | *Per Revised Method* *Per Unit* | *Per Total* | |
|---|---|---|---|---|---|---|
| Sales | 220,000 | $5,31 | $1,168,200.00 | $5.31 | $1,168,200.00 | |
| Mining earnings | | | 869,000.00 | | | |
| | | | $2,037,200.00 | | | |
| Cost of Goods Sold: | | | | | | |
| Raw ore cost— | | | | | | |
| Inventory, January 1, 1941 | 50,000 | 4.00 | $ 200,000.00 | 1.0428 | $ 52,140.00 | |
| Mining cost | 200,000 | 4.345 | 869,000.00 | .9945 | 198,900.00 | |
| Total | 250,000 | | $1,069,000.00 | | $ 251,040.00 | |
| Inventory, December 31, 1941 | 20,000 | 4.345 | 86,900.00 | .9945 | 19,890.00 | |
| Cost of ore to reducing plant | 230,000 | 4.27 | $ 982,100.00 | 1.005 | $ 231,150.00 | |
| Reduction plant expense | (221,000) | (3.75) | 828,750.00 | (2.85) | 629,850.00 | (Note 1) |
| Total | | | $1,810,850.00 | | $ 861,000.00 | |
| Inventory, January 1, 1941 | 5,000 | 4.40 | 22,000.00 | 1.27 | 6,350.00 | |
| | 235,500 | | $1,832,850.50 | | $ 867,350.00 | |
| Less—Inventory December 31, 1941 | 15,000 | 4.7795 | 71,692.50 | 1.2795 | 19,192.50 | (Note 2) |
| | 220,000 | | | | | |
| Shrinkage | 20.000 | | | | | |
| Cost of Oxylite produced | 200,000 | 8.805875 | $1,761,157.50 | 4.24078 | $ 848,157.50 | |
| Inventory of Oxylite, January 1, 1941 | 25,000 | 8.39 | 209,750.00 | 4.328 | 108,200.00 | |
| Total | 225,000 | | $1,970,907.50 | | $ 956,357.50 | |
| Less—Inventory of Oxylite December 31, 1941 | 5,000 | 8.39 | 41,950.00 | 4.22895 | 21,144.75 | (Note 3) |
| Oxylite sold 1941 | 220,000 | | $1,928,957.50 | | $ 935,212.75 | |
| Gross profit | | | $ 108,242.50 | | $ 232,987.25 | |

NOTE 1. The units processed in the reduction plant are determined as follows:

| | |
|---|---|
| Opening inventory of units in process 5000 tons processed during the year to the extent of 90% | 4,500 tons |
| Ore received during the year and completely processed (230,000 less 15,000) | 215,000 tons |
| Ore received during the year and processed to the extent of 10% (10% of 15,000) | 1,500 tons |
| Total processed | 221,000 tons |

NOTE 2. The unit cost of inventory of goods in process and Oxylite at December 31, 1941 is calculated as follows:

| | *Goods in process* | *Oxylite* |
|---|---|---|
| 1941 mining cost | $ .9945 | $ .9945 |
| Reduction cost (work in process at 10%) | .285 | 2.85 |
| Shrinkage factor (10% of total) | | .38445 |
| Total cost | $1.2795 | $4.22895 |

No part of the shrinkage loss has been allocated to goods in process on the theory that when they are completed they will have their own loss to bear.

(b) (1) The inventories should have been valued at cost.
(2) Costs should not have been charged with the market value of ore mined. This treatment resulted in grossly overstating costs and taking into the accounts unrealized profit.
(3) The reducing costs and inventory values were overstated by the inclusion of mining costs in the reducing plant expenses.
(4) The arbitrary method of valuing work in process and finished goods is wrong. The value of work in process should be determined by consideration of the costs incurred and the state of completion of the goods. The valuation of the finished goods ($8.39) is far in excess of either cost or selling price.

*Solution to Problem 2*

(a) 1. This item should have been handled as a reduction of Apex Inc. capital and surplus.
2. Is this goodwill or discount on new stock or is it an item to be written off?
3. If the item is goodwill it should be shown as such; if it is stock discount it should be deducted from capital stock; if it is to be written off it should be charged to profit and loss.
4. If this item is to be written off the write-off should be approved by the board of directors.

(b) 1. If this company is still in existence its accounts should be consolidated with those of the parent company.
2. If the company no longer exists (as is the case with item (a)) then the amount should be written off to profit and loss.
3. If the amount is to be written off the write-off should be approved by the directors.

(c) 1. The treasury stock account should be relieved of $9,300.00, the cost of 93 shares issued as bonuses.
2. The balance of this item is properly regarded as treasury stock but it should not be shown as an asset. The balance, $4,700.00, should be deducted from the sum of capital stock and earned surplus.
3. The shareholders and directors should have approved the issuance of the 93 shares.

(d) 1. These shares are treasury shares, and they should not be shown as an asset. The cost of the shares should be deducted from the sum of capital stock and surplus. If the shares are retired, capital stock should be charged at $100.00 per share, paid-in surplus should be charged at $3.00 per share and earned surplus should be charged at $12.00 per share.
2. The acquisition of these shares should have been approved by the shareholders and directors.

(e) 1. The stockholders and directors should have approved this purchase.
2. The remaining treasury shares (see item (g)) are not properly shown as assets but should be deducted from the sum of capital stock and surplus.
3. If the shares are retired, capital stock should be charged at $100.00 per share and paid-in surplus should be credited at $65.00 per share.

(f) 1. Why were the fractional shares not issued?
2. If the company is prohibited from issuing fractional shares this credit should be returned to surplus
3. If there are no restrictions on the issuance of fractional shares, or if unexpired rights are outstanding, then this credit should be removed from the treasury stock account and shown as a liability.

(g) 1. This sale should have been authorized by the stockholders or directors.
2. The difference between selling price and cost should be credited to paid-in surplus.

*Solution to Problem 3*

*Parathon Distributing Company*
*Summary of Cash Receipts and Disbursements*
*January 1, 1941 to December 31, 1941*

| | | | |
|---|---|---|---|
| *Receipts* | | | |
| From customers: | | | |
| Customers' balances, December 31, 1940 | | $ 246,510.00 | |
| Sales | | 2,887,000.00 | |
| | | $3,133,510.00 | |
| Less: Charge offs | $ 4,600.00 | | |
| Customers' balances, December 31, 1941 | 302,496.00 | 307,096.00 | $2,826,414.00 |
| Bad debt recoveries | | | 1,260.00 |
| Sale of equipment for net book value | | | 2,528.00 |
| *Total receipts* | | | $2,830,202.00 |
| *Disbursements* | | | |
| Additions to buildings and equipment | | | $ 16,628.00 |
| Purchases: | | | |
| Cost of merchandise sold | | $1,885,286.00 | |
| Increase in inventory | | 66,494.00 | 1,951,780.00 |
| Operating expenses: | | | |
| Accounts payable balances, December 31, 1940 | | $ 131,000.00 | |
| Operating expenses, 1941 (adjusted) | | 865,890.00 | |
| | | $ 996,890.00 | |
| Accounts payable balances, December 31, 1941 | | 126,886.00 | 870,004.00 |
| Taxes: | | | |
| Accrued taxes, December 31, 1940 | | $ 37,767.00 | |
| Tax expense | | 8,905.00 | |
| | | $ 46,672.00 | |
| Accrued taxes, December 31, 1941 | | 12,189.00 | 34,483.00 |
| Interest: | | | |
| Accrued interest, December 31, 1940 | | $ 11,250.00 | |
| Interest expense | | 22,500.00 | |
| | | $ 33,750.00 | |
| Accrued interest, December 31, 1941 | | 22,500.00 | 11,250.00 |
| Dividends paid | | | 15,000.00 |
| *Total disbursements* | | | $2,899,145.00 |
| *Excess of cash disbursements over cash receipts* | | | $ 68,943.00 |

The adjustments required to determine the net income are as follows:

(1)

| | | |
|---|---|---|
| Buildings and equipment | $ 2,428.00 | |
| Operating expenses | | $ 2,428.00 |
| To reclassify charge made to operating expenses. | | |

(2)

| | | |
|---|---|---|
| Inventory shrinkage | $22,510.00 | |
| Inventories | | $22,510.00 |
| To reduce inventories to market. | | |

The net income for the year is calculated as follows:

| | |
|---|---|
| Sales | $2,887,000.00 |

| | |
|---|---|
| Merchandise sold | $1,885,286.00 |
| Operating expenses | 865,890.00 |
| Depreciation expense | 12,581.00 |
| Bad debts | 31,040.00 |
| Property and income taxes | 8,905.00 |
| Interest expense | 22,500.00 |
| Amortized debt discount | 2,000.00 |
| Inventory shrinkage | 22,510.00 |
| | $2,850,712.00 |
| Net income | $ 36,288.00 |

***Computation of Amount to Be Paid by Paragon Mills, Inc.***

| | |
|---|---|
| Excess of cash disbursements over cash receipts | $ 68,943.00 |
| Less interest included above | 11,250.00 |
| Net loss, per bond indenture | $ 57,693.00 |
| Minimum net income, per indenture (2×$22,500.00) | 45,000.00 |
| Due from Paragon Mills, Inc. | $102,693.00 |

***Parathon Distributing Company***
***Balance Sheet***
***December 31, 1941***
***Assets***

| | | | |
|---|---|---|---|
| *Current assets* | | | |
| Cash | | $183,522.00 | |
| Customers' accounts | $302,496.00 | | |
| Less reserve for bad debts | 36,200.00 | 266,296.00 | |
| Due from Paragon Mills, Inc. for income deficiency | | 102,693.00 | |
| Inventories, at market (cost $89,434.00) | | 66,924.00 | $619,435.00 |
| *Building and equipment, at cost* | | $245,028.00 | |
| Less reserve for depreciation | | 23,647.00 | 221,381.00 |
| *Total assets* | | | $840,816.00 |
| ***Liabilities*** | | | |
| *Current liabilities* | | | |
| Accounts payable | | $126,886.00 | |
| Accrued taxes | | 12,189.00 | |
| Accrued interest | | 22,500.00 | $161,575.00 |
| *4½% income bonds, due July 1, 1953* | | $500,000.00 | |
| Less unamortized debt discount | | 23,000.00 | 477,000.00 |
| *Capital stock and surplus* | | | |
| Capital stock | | $ 10,000.00 | |
| Paid-in surplus | | 102,693.00 | |
| Earned surplus: | | | |
| Balance, December 31, 1940 | $ 68,260.00 | | |
| Net income, 1940 | 36,288.00 | | |
| | $104,548.00 | | |
| Less dividends paid | 15,000.00 | 89,548.00 | 202,241.00 |
| | | | $840,816.00 |

NOTE 1. It is assumed that "net tangible assets" means total tangible assets less applicable reserves. As a result of this assumption there is no deficiency based on the "net tangible assets."

NOTE 2. The bonds of the Parathon Company are not strictly income bonds because the income of the Company is guaranteed by the Paragon Company. While only $11,250.00 was disbursed during the year for interest, it must be assumed that $22,500.00 fell due because of the guaranty by Paragon.

# BOOK REVIEWS

THREE ECONOMIC AUDITS IN THE INTERLUDE BETWEEN TWO WORLD WARS

I *Final Report of the Committee on Industry and Trade*. 7 vols. (London: H. M. Stationery Office, 1929).

II *Enqueteausschuss—Ausschuss zur Untersuchung der Erzeugungsund Absatzbedingungen der deutschen Wirtschaft*. 102 vols. (Berlin: E. S. Mittler & Sohn and Paul Parey, 1931).

III *Temporary National Economic Committee on the Concentration of Economic Power in the United States*. 77 vols. (Washington: U. S. Government Printing Office, 1941).

In July, 1924, Ramsay MacDonald, Prime Minister in Great Britain's first Labor Government, set up, under the chairmanship of Sir Arthur Balfour, a committee composed of distinguished scholars and political leaders whose duty it would be to ". . . inquire into the conditions and prospects of British industry and commerce, with special reference to the export trade." It was to conduct a thorough audit of the weaknesses of the post-war British economic system, and it was to recommend methods for overcoming them. In a "Memorandum Accompanying Terms of Reference," three questions were posed for investigation: (1) to determine " . . . the present position of British overseas trade and the prospects of British participation in the markets of the world to ensure sufficient and continuous employment and a satisfactory standard of living in this country." (2) " . . . the ability of British industry to meet competition under the conditions thus determined and to adapt itself to changes in the nature of overseas demand." And, (3) " . . . the relations between those engaged in production, or the problem of conflict and agreement between capital and labor in all its more significant manifestations."

The moment of launching the inquiry seemed auspicious. The immediate post-war upheavals, political and economic, appeared to have run their course. The great depression of the early twenties had been largely overcome. The demands of Poincare having been met by Stresemann on paper at least, the evil cycle of catastrophe inaugurated by the Ruhr occupation seemed to have come to an end. The inflation was stilled, and the Dawes committee had appeared with what many felt was at least a first approximation to a "scientific solution" for the complicated problem of reparations payments. The wave of revolutionary movements which had unseated half the crownheads of Europe had seemingly exhausted itself. The Soviet had turned to the more comforting (to the western powers) ways of the New Economic Policy; the "New Economic Era" in America was burgeoning with an optimism which outstanding economists felt might well drag the whole civilized world in its superabundant wake.

Two years later, in the midst of a period which in many respects seemed equally auspicious for their country, the Germans launched a similar inquiry. By this time the Locarno treaties of 1925 had stabilized her frontiers. The Dawes Plan had put her currency on an even keel and had regularized the whole procedure of reparations collection and transfer. The revamping and modernization process, called "rationization," had permeated sufficiently through her industrial system to offer first fruits which appeared to justify the most optimistic expectations of its principal prime-movers. The more critical internal political strains seemed to have been greatly relieved by the Fabian tolerance of the Social Democrats towards the more or

less counterbalanced opponents of right and left. Launched in a trough between two "pseudo-prosperities"[1] it may have been, but the Committee of Inquiry (*Enqueteausschuss—Ausschuss zur Untersuchung der Erzeugungsund Absatzbedingungen der deutschen Wirtschaft*—abbreviated hereafter as E.A.) began its labors in 1926 at a time when it appeared that adequate diagnosis could lead to therapeutic measures through which a badly mutilated Germany could still achieve real recovery in the post-war world.

Twelve years later the Americans undertook a similar task in a much more precariously balanced world. Developments abroad seemed more ominous than at any time since the outbreak of the great depression in 1929. But there was still an atmosphere of hope. Behind lay the most prosperous year this country had ever experienced. The levels of 1929 had been reached in most fields, and in many had been surpassed. Though unemployment was still alarmingly high, it was possible for political proponents to say with some confidence that "the New Deal has worked." To be sure, 1938 witnessed a marked setback, yet to many there seemed nothing at home to justify the belief that the decline was of more than a temporary character. Nor had hope been abandoned that the international situation would clear up. Proceeding with bi-lateral trade agreements we had apparently found a way of meeting Axis trade threats, and the Axis might meanwhile learn a few lessons in economic common sense. The Nazis had marched into Austria in early 1938, but the belief was widespread that this brutal act, evil as it appeared in most respects, had at least settled three points: it had split Italy and Germany; it could not be opposed on the ethnic grounds that Hitler had seemingly made the basis of his foreign policy, and so, his most important territorial demand having been met, other differences might be settled by more peaceable means; the allied powers, France and England, were determined to satisfy the Nazi war lord's "legitimate" claims, and with such appeasement we could surely have peace and prosperity "in our times."

Fantastic as these opinions may seem to us now, a brief visit to any newspaper morgue will satisfy the skeptic that such was the dominant tone at the time when, following receipt of a most challenging letter from Pres. Roosevelt on April 29, 1938, Congress by joint resolution (June 16, 1938) created the Temporary National Economic Committee (TNEC) to make a ". . . complete study and investigation . . . on monopoly and concentration of economic power in and financial control over production and distribution of goods and services . . .," and which should be followed by recommendations for legislative and administrative action for insuring continued competition, stabilizing price levels, and establishing guide posts for adequate governmental regulation.

Each of these comprehensive national economic surveys was terminated in the midst of rapidly spreading economic and political disaster. The British *Final Report of the Committee on Industry and Trade* was brought to a close in March 1929 after the outbreak of the great depression had been shown to be a world-wide disaster of unprecedented proportions. The "General Summary" (Gesamtbericht) of the German Committee of Inquiry was published in 1931—breaking off the work of the investigation before it had been completed because of lack of funds—

[1] It is "hindsight" rather than foresight which led the German jurist, Rudolf Callmann, to describe 1926 as "perhaps the most dangerous period of Germany's post-war economy." (See pp. 50–51 of his summary of the Enqueteausschuss reports in TNEC Monograph #40, "Regulation of Economic Activities in Foreign Countries.") The government was much worried over the relapse of 1926, but the dominant note was—certainly in contrast to previous years—one of optimism for the future as the Inquiry was launched.

in the midst of that phase of the depression which had already shaken the economic and political structure of Germany from center to circumference, and at a time when the curious structure of reparations, inter-allied payments, and American loans to rehabilitate Germany had been shown to be a jerry-built concoction whose collapse might be expected momentarily. The "Final Report of the Executive Secretary" of the TNEC was submitted on March 15, 1941, and the "Final Report and Recommendations of the Temporary National Economic Committee" on March 31, 1941—both dates which appear on the calendar well into the second year of the second World War and after the establishment of the National Defense Council whose duty it was to prepare this country for eventual entry into the spreading conflict.

It is only natural that the three committees should have been much more influenced by the atmosphere in which their work was launched than by the conditions which characterized the drafting of their conclusions. Yet the fact that their findings, while dealing in each case with the most critical issues of the times still did not offer any real explanation for the catastrophes which were to follow, has caused these enormously important surveys quickly to lapse into oblivion. This is an undeserved fate, for much is to be learned from them which is vitally important to an adequate grasp of the larger events which dominate contemporary times.

On the positive side, these surveys constitute audits of the three most important capitalistic powers on the eve or near eve of a second world-wide death-struggle for survival amongst them. They constitute a series of findings which are close to "must reading" for economists in particular and for social scientists in general. The wealth of material brought together, particularly in the German and American investigations, is enormous, and it ranges in each case nearly the entire gamut of the economic system. Nearly all of the critical issues of the interlude between the two world wars are dealt with directly or indirectly. It is hard to see how any social scientist can acquire a rigorous grasp of the events of this tragic interlude without having carefully digested many of the separate volumes and the final summaries of each of these investigating committees. The individual volumes of the several reports are so rich in detail that they will constitute basic source materials for countless background studies to come of the current era and of the years that are to follow.

On the negative side, the reports are marred by many blind spots, natural enough perhaps from the point of view of the times of their compilation, but some of which seem almost incredible today. The German reports alone end on a gloomy note. The British and American reports take practically no cognizance of the events which constitute the environment for their final conclusions. In the Balfour reports only a dissenting "Memorandum," signed by a minority of seven members of the Committee, serves to warn that the vague and general recommendations of the majority are in danger of by-passing what we now recognize to be the critical issues which faced Britain in the twenties and the thirties. In the "Final Report of the Executive Secretary" of the TNEC, a cross-section of Committee findings is presented which fills the Secretary, Dr. Dewey Anderson, with grave concern, but the "Final Report and Recommendations of the TNEC committee" as a whole passes over these troublous matters with a lightheartedness reminiscent of the easy and bland optimism of the "New Economic Era." Only a few of the minority reports, notably that of Isador Lubin and Leon Henderson, raise serious doubts to ruffle the general and quiet complacency which

characterizes the final recommendations.

Despite some rather striking differences in the objectives and coverage of the three inquiries, their results are in many respects remarkably similar. The stated object of the Balfour Committee laid heavy emphasis upon Britain's overseas trade, and all discussion of internal industrial and commercial reorganization was made contributory to reëstablishment of British supremacy in her chosen markets overseas. The German inquiry was concerned with a similar problem—a problem rendered infinitely more complicated than that which faced Sir Arthur Balfour and his colleagues by virtue of loss of the war, all foreign colonial possessions, many important sources of raw materials, and numerous and highly valuable foreign affiliations, contacts, and machinery for the normal conduct of overseas trade—but one which was so construed that it almost inevitably became centered in two questions: (1) Germany's capacity to pay reparations, and (2) her capacity to reorganize or "rationalize" the whole of her productive and trading equipment to overcome the handicaps which loss of the war had forced upon her and to achieve a level of internal prosperity which might offer some assurance of future economic, political, and social stability. The TNEC investigation, in turn, centered almost entirely on the problem of concentration of economic power in the hands of industrial and financial giants. Relatively little attention was paid to world events, and not a great deal to problems of policy which did not seem to have a fairly direct relationship to some one or more phases of the concentration movement.

The British inquiry gave rise to the publication of six volumes aside from the "Final Report" mentioned above, three of which were concerned directly with the problem of overseas trade, and three of which were centered around problems of industrial relations and industrial efficiency as they bore upon Britain's international competitive position.[2] The German and American inquiries were much more pretentious. The German publications run to over 100 volumes which, instead of being based on a sampling of what might be regarded as more or less typical situations, as did the Balfour Committee, constitute a thorough and complete investigation of almost every important segment of the German economic system. The work was divided among five principal subcommittees, dealing respectively with Problems of General Economic Structure; Agriculture; Industry, Trade, and Handicrafts; Labor Efficiency; and Money, Credit and Finance.[3] The TNEC publications consist of some 76 volumes, divided into 31 volumes of Hearings, 43 volumes of special studies or Monographs, the two summary volumes cited above, and a final comprehensive Index.[4] The German pub-

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[2] Respectively, *Overseas Markets* (pp. iv, 740); *Survey of Textile Industries* (pp. v, 361); *Survey of Metal Industries* (pp. v, 528); *Industrial Relations* (pp. v, 497); *Factors in Industrial and Commercial Efficiency* (pp. v, 544); *Further Factors in Industrial and Commercial Efficiency* (pp. v, 361). All volumes published by H. M. Stationery Office.

[3] The bulk of the series was published by E. S. Mittler & Sohn, Berlin; the balance appeared from the house of Paul Parey, Berlin, and various other establishments. The first published the following: *Allgemeiner Teil* (*Vollsitzungen des Ausschusses*), 2 vols.; I. *Unterausschuss* (*Allgemeine Wirtschaftsstruktur*), divided into six special groups (Arbeitsgruppen), publishing 35 vols.; II. *Unterausschuss* (*Landwirtschaft*), 19 vols.; III. *Unterausschuss* (*Gewerbe: Industrie, Handel und Handwerk*) with two Special Groups, 33 vols.; IV. *Unterausschuss* (*Arbeitsleistung*), 9 vols.; V. *Unterausschuss* (*Geld-, Kredit- und Finanzwesen*), 2 vols.; and the *Gesamtbericht*, referred to in the text. Eight volumes of the Subcommittee on Agriculture were published by Paul Parey; all but one of these appeared under the auspices of the Ministry of Agriculture (Reichsministerium für Ernährung und Landwirtschaft). One volume, *Sozialer Auf- und Abstieg im deutschen Volk*, appeared in vol. 117 of *Beitrage zur Statistik Bayerns*, one section, *Die deutsche Landwirtschaft in the Zeitschrift des Bayerischen Statistischen Landesamts*, Munich, 1930. One final volume, *Der Frauenerwerk im deutschen Reich*, I have not seen. I do not know who published it.

[4] A brief summary of the separate volumes of the Hearings are to be found on pp. 695–708, and of the Monographs in pp. 710–727, of the volume *Final Report and Recommendations of the Temporary National Eco-*

lications included a study of the Balfour reports and committee procedure, and the TNEC studies a summary of the German Committee of Inquiry reports.[5] The TNEC reports resemble the Balfour reports in their frequent resort to sampling methods,[6] but also resemble the German inquiry in general comprehensiveness and range of issues dealt with.

As indicated above, the findings of these three committees are in many respects remarkably similar. Perhaps the most striking single conclusion is that the first world war brought about relatively few fundamental changes in structure, or altered seriously the trends in structural change of these three major economic systems. This argument is implicit in the Balfour and TNEC reports; explicit in the German reports. By common agreement the most significant changes wrought by the war lie in a) tightening of the internal and external tensions which gave rise to the first world war, and b) the growing importance of "extra-economic" or "artificial" interferences in the functioning of the economic system as a whole. The *General Summary of the German Committee of Inquiry* dwells bitterly, but with almost complete resignation, on these facts. The war, it finds, changed the structure of German resources, made Germany a debtor instead of a creditor country, altered the world division of labor, seriously affected the age structure of the German population, etc. Yet the report deals with these trends which have been accelerated or slowed down by the interferences of the "artificial" Peace Treaties, sui generis. The interferences complicate, but create next to nothing new. Even the "artifices" are not out of line with those employed to an increasing extent in the past.

A general conclusion to this effect—especially for Germany, although it is clearly in line with the conclusions of such writers as Bruck[7] and Neumann[8]—is a startling one, for it carries with it the broad implication that whatever forces might have brought about the first world war may also have contributed heavily to the outbreak of the second. The contemporary significance of such an inference is too obvious to require comment. On this basis alone, quite aside from their great historical value, the reports of these three national economic inquiries would merit most careful attention.

Though they do not all cover the same questions, the points on which two or all three of the inquiries agree in whole or in large part are not too difficult to summarize. The following seem to me particularly important:

1) The industrially "nuclear areas"—those of the "North Atlantic industrial nucleus"—of England, Germany, France, Belgium, Holland, Switzerland, the northeastern United States, etc., are declining in relative importance in both world industrial output and in volume of world trade. Stated contrariwise, the "peripheral" areas (Randgebiete) are becoming industrialized, and are becoming potent rivals in the structure of world trade. In both industry and trade the world is being, so-to-speak, "De-Anglicized," "De-Europeanized," and "De-Americanized." Trends here reach back beyond the first world war; they were enormously accelerated by the events of the war; the postwar witnessed an acceleration of the trend.[9]

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*nomic Committee* referred to above. All volumes are obtainable from the United States Government Printing Office, Washington, D. C.

[5] *The German Temporary Economic Committee*, by Rudolf Callman, TNEC Monograph No. 40, pp. 50–62.

[6] In the Balfour reports, those on the textile and metal industries; in the TNEC reports, the extensive hearings, in particular, on life insurance. See Parts 4, 10, 10-A, 12, 13 and 28 on Life Insurance; Parts 14, 14-A, 15, 15-A, 16, 17, and 17-A on the Petroleum Industry; and Parts 18, 19, 20, 26 and 27 on the Iron and Steel Industry.

[7] W. F. Bruck, *Social and Economic History of Germany from William II to Hitler* (Oxford U. Press, 1938), in particular Chap. IV.

[8] Franz Neumann, *Behemoth* (Oxford U. Press, 1942).

[9] See in particular, *Schlussbericht über den Aussenhandel* of the EA reports.

The older industrial areas are the most technically backward; England most of all.[10]

(On this showing we might now look forward to the industrialization over the next half century of the whole of Asia, Africa, South America, South-Central and Eastern Europe, Polynesia, etc. Whatever the level of disorganization of the preëxisting world division of labor which came from the last world war on this account will appear on a higher level following this war. And the newer countries will, as rapidly as they industrialize, be apt to be the most technologically up to date.)

2) Within each of the great capitalistic powers, concentration of economic power is going forward systematically and cumulatively; governmental measures to compel reversion to competitive norms have either been given up almost entirely (England; Germany) or have failed to stem the tide—even to change much the forms or expression of monopoly power (U.S.). Advancing monopoly controls are to be found in all fields—heavy industry and light industry; production, distribution, and even the services; local industries and national industries, etc.—and as measured by almost any criterion which may be employed. The Balfour Committee, speaking for the classical land of "free competition," is the least disturbed by this phenomenon; the TNEC the most. Small business is losing out to some degree or other in nearly every field.

(The greatest stimulus in this direction was provided by the first world war; the second world war is repeating the pattern on a bigger and more comprehensive scale. Both England and the United States are rapidly approaching the German levels of concentration, and are witnessing the disentegration of small business on a scale that rivals that of Nazi Germany. What are the implications of the coming aftermath when it is remembered that Germany's situation in these respects was rendered more acute than that of the U. S. or England following the first world war by the inflation which wiped out so many of her small and medium-sized businesses? It was these bankrupt little business men who played so important a role in the rise of Hitler's Brown troops.)

[10] See the volumes on *Factors in Industrial and Commercial Efficiency* of the Balfour Committee, and the several reports of the EA on the heavy industries—particularly coal, iron and steel, and chemistry.

3) The looser forms of organization, in particular the trade association and the cartel (except in the U.S.) have been growing with unexampled speed in practically all fields. These forms, since commonly referred to as organized on the principle of "self-government" in business, are performing more and more functions of a cartel-like character, and represent a fusion of economic and political pressure groups. Opinions on the merits of these forms, from the point of view of national policy, vary from mild approval in the Balfour reports, to general, though widely varying, belief in their acceptability in various of the TNEC reports. Monographs No. 18, the *Trade Association Survey*, and No. 34 on *Control of Unfair Competitive Practices Through Trade Practice Conference Procedure of the Federal Trade Commission*, for example, hold these forms of business organization to be either harmless or mildly constructive. Monographs No. 21 on *Competition and Monopoly in American Industry*, No. 26 on *Economic Power and Political Pressures*, and No. 31 on *Patents and Free Enterprise*, on the contrary, hold them dangerous to the structure of free enterprise if not closely regulated; No. 26 finds them a possible threat to the structure of democratic institutions as a whole. The German reports are not worried about cartels or trade associations at all; they are accepted as constituent elements in the general system of German monopoly controls.

(Unrelated in any of the reports, except to a limited extent in the EA volumes dealing with the heavy industries, are the following: fusion of cartel-functions with trade association activities; federation of trade associations and their cartel-affiliates into peak associations" (Spitzenverbände); the virtual disenfranchisement of stockholders; the rise of a self-perpetuating inner "managerial" cliques in the typical large corporation; the fusion of financial and industrial institutions; the rise of great familial groupings (see, e.g. TNEC Monograph No. 29 on *The Distribution of Ownership in the 200 Largest Nonfinancial Corporations*); the moving of the large corporations and blocked familial holdings to the center of the trade association and cartel networks, etc. Yet most of these separate trends are noted in the German and American reports; some of them in the Balfour reports. What

are the social, economic, and political implications of convergence—so far as they do converge—of these trends, none of which show any significant retardation to date?)

4) Recent developments in industrial technology favor if, in fact, they do not compel large scale reorganization. This position was heavily underscored in the two Balfour Reports on *Factors in Industrial & Commercial Efficiency*, the EA reports of the sub-committees on Industry, Trade, and Handicrafts, and on Labor Efficiency, and in Part 30 of the TNEC Hearings on Technology and Concentration of Economic Power and in Monograph No. 22 on *Technology in Our Economy*. These reorganizations promote and rarely retard monopoly controls on the one hand, and the expansion of the looser forms of business organization into all-inclusive networks on the other.

(These trends make for unification, integration, coördination—in short for tightly organized industrial planning on an ever-widening scale. Technological changes since the termination of the EA and the Balfour inquiries have accelerated these integrative forces; the exigencies of organization for production in the second world war has added still greater emphasis along these lines. What are the implications for the coming post-war world? Can it be anything else but a "planned world" if it is not to turn its back on the newer technological changes?)

5) Price, marketing, production, and investment control are being increasingly exercised by private corporate, cartel, and trade association bodies. "Managed" or "administered" prices in peacetimes are becoming the rule, not the exception. The Balfour Committee notes these trends in passing but does not dwell upon them. Both the German and American inquiries examine them at great length. The German Inquiry finds them inextricably bound up with the general trend towards centralization, monopoly, governmental regulation, and industrial reorganization; it finds that the premium laid upon them is heightened by the rising importance of overhead costs; it finds the structure of costs and prices becomingly increasingly fixed, inflexible, rigid; it finds the conditions to profitability in face of these relatively high and rigid costs require steadily widening markets, but that throughout the post-war world markets were not widening but contracting with the result that not only both capital and labor were underemployed but the more efficient plants as well as the less efficient were rendered more and more sensitive to unfavorable market changes. The TNEC finds these trends equally present in the American scene, but suggests little beyond a certain strengthening of the anti-Trust procedure to meet the situation.

6) The hand of the state is omnipresent; the expansion of public regulatory authority has grown with the passage of the years; the range of functions brought under administrative authority has expanded; the rigidity of the controls exercised has increased. There are next to no backward steps in this process; nobody is (no pressure group) opposed to this trend; every pressure group wants the governmental largesse dispensed to itself. The German reports take this for granted in all fields; the Balfour Reports take it for granted in the foreign field, and recommend more government aid for British industry abroad than ever before; the TNEC shows the tendency everywhere on the flow, and its rather mild recommendations call for a therapy which requires further extension of the federal hand (national incorporation and more rigorous control over patent monopolies, for example).

(Nothing stands out more clearly from the three reports than the impression that on the policy level, at least, there is no longer any such thing as "economics." "Political economy" has become the appropriate term. Every economic issue has now its specific political angle; every political problem its specific economic angle. We are dealing with the "neomercantilist" state organized on a monopolistic footing, based on a mass-production industrial technology, and interwoven at the policy level with the state to a point where laissez faire is no longer looked upon as being either good or bad; it is meaningless.)

7) Both directly on its own account, and indirectly through the process of "etatisierung" economic activity is becoming bureaucratized. The Balfour reports notice this tendency, but pass it by without extended treatment. The *Gesamtbericht* views the tendency with alarm, but finds no way of escaping the trend. TNEC Monograph No. 11 on *Bureaucracy and Trusteeship in Large*

*Corporations* welcomes the trend with the disengenuous hope that a prime considera-tion amongst the new coöptative elite will be the public welfare. The German reports fear that bureaucratization means permeation of the economic system with a certain arteriosclerosis; the TNEC report accepts the central thesis of Burnham's interesting, but patently jejune *Managerial Revolution.*

(These trends are of still more importance today. But none of the reports have dealt much with the arts of organization, nor the possibilities in the fields of research, incentives, etc. for overcoming the evil effects of excessive bureaucratization. The role of accounting as an instrument of reporting, control, and fixing responsibility is, for example, completely ignored in all three studies.)

8) Autarchy and other manifestations of economic nationalism are everywhere on the flow; nowhere on the ebb. Concerned primarily with maintaining British control over Empire markets—a policy which led in the interim to the famous Ottawa Agreement—the Balfour Committee seemed but relatively little disturbed by the trend. The reverse is true of the German reports. The two summary volumes on world trade paint a very gloomy future for Germany on the international markets. The TNEC is less concerned with the trend, perhaps because foreign trade plays a relatively minor role in the economic life of the U.S. (although Monograph No. 6 on *Export Prices and Export Cartels* favors further extension of the Webb-Pomerene weapon of economic nationalism). Peculiar alone to this country is the concern over the problem of interstate trade barriers (e.g. Monographs No. 33 on *Geographical Differentials in Prices of Building Materials*, No. 42 on the *Basing Point System*, and Part 20 of the Hearings on Interstate Trade Barriers).

9) The German Inquiry and the Balfour reports take cognizance of the problem of internal class conflict. The American investigation passed up this problem almost completely. The majority and minority reports alike of the British Committee recognize the necessity of providing some new incentives for the average worker; the minority report believes this cannot be achieved without worker participation in the management and policy formation of industry. The TNEC alone, in Part 8, Problems of the Consumer, and Monograph No. 24 on *Consumer Standards*, takes note of the impact of business policies, industrial organization, and governmental regulation upon the consumer interest.

In the face of findings of such portent, the German Committee comes to no conclusions which may serve as guides for policy, and offers no recommendations. The majority report of the Balfour Committee recommends merely that British industry attempt to reorganize and rationalize itself, that efforts be made to evolve "a new type of industrial leader and administrator" to find for him the necessary venture capital, and to find ways and means for bringing about greater coöperation amongst the "human factors" of industry—labor and capital. The minority report urged that much more be done by resort to state aid for the underprivileged, encouragement of the coöperative movement, more vigorous control over industrial and particularly monopolistic practices, greater encouragement to scientific research, etc. But aside from proposing a National Economic Committee to continue the good work of the Balfour Committee, it made no suggestions for further instrumentation.

The recommendations of the TNEC were, with minor exceptions, equally vague The "lower third" should be aided through such devices as the food-stamp plan, and improved housing; technological gains should be passed on to the ultimate consumer; the desirability of decentralizing industry should be explored; competition should be stimulated. More concrete were the general recommendations endorsing a national law of incorporation; closer control over foreign patents and over domestic patent procedures; repeal of the Miller-Tydings resale-price-maintenance law; and additional restraints upon mergers and other means for circumventing the anti-trust laws. Yet in face of the material

brought together in their own investigation these recommendations also seem to be handled as matters of theory having next to nothing to do with the vital shaping forces which brought about the great depression and ushered the United States into the second world war.

ROBERT E. BRADY
*University of California*

### PROGRESS IN FEDERAL BUDGETARY REPORTING

The basic law governing accounting, auditing and financial reporting in the United States Government is the Budget and Accounting Act of 1921. This Act created (1) the General Accounting Office under the Comptroller General, and (2) the Bureau of the Budget. The Bureau of the Budget was originally placed in the Treasury Department under the Budget and Accounting Act, but in the reorganization Act of 1939 it was placed in the Office of the President which was a sensible change.

The broad purposes of the 1921 Act may be described as follows:

(a) To provide for the formulation of a comprehensive budget to be prepared and transmitted to Congress by the President;

(b) To provide for the independent audit of financial transactions by an officer directly responsible to Congress.

The Comptroller General is also given the power to prescribe accounting procedures in the various departments. Responsibility for account-keeping was not placed upon him but was left in the various departments and agencies. The general account-keeping function, placed in the Treasury under previous Acts of 1789 and 1894, was left in that Department.

The Act of 1921 does not place upon the Comptroller General the responsibility of either preparing or certifying financial statements. The principal requirement of the Act in this respect is placed upon the President, who, in connection with the transmittal of the budget, must submit a complete financial statement of the government. Under other acts, certain statements are also required of the Treasury Department.

It should always be kept in mind that the power to grant money is a legislative function and that spending and accounting are executive functions. Finally, Congress must have the benefit of an independently audit report on the activities of the executive branch. Unfortunately, all too many appropriation acts now dictate accounting instructions and procedures. Such matters should be left to the executive to make an adequate accounting and reporting subject only to independent audit by an agent of Congress.

In the years that have elapsed, little over-all progress was made until recently in coördinated accounting and comprehensive reporting. The Comptroller General, while he aided departments in establishing procedures and accounting systems, devoted himself primarily to a meticulous audit of financial transactions. The audit program of the office differed materially in principle and in method from the standards followed in private and public audits generally. Audits were not completed until long periods of time had elapsed during which all persons who had disbursed government funds were held personally liable until the Comptroller General's approval was given.

A committee of the American Institute of Accountants made a study of this matter about three years ago, and listed fifteen important deficiencies in the organization and procedure for accounting and reporting in the Federal Government.

1. Lack of uniformity, adequacy and completeness in the accounting systems of the various departments and agencies. Some have excellent

systems based on sound principles. Others are serious deficient in this respect.

2. Lack of uniformity in application of accounting principles and consistency in these matters from period to period. For example, some departments set up as encumberances their entire requirements for certain types of expenditures for the fiscal year, while other departments enter as encumbrances only actual obligations incurred.

3. Lack of uniformity in classification of accounts, especially expenditures, in the budget the bookkeeping records, and the reports. Different classifications are followed in many instances for these various purposes, with the result that comparison of actual results with budget estimates is difficult, and information needed for budget purposes is not in the form most suitable for use.

4. Inadequate control over budget operations. Provision for accounting under budget-bureau apportionments, and regular reports on departmental budget operations are lacking. In many cases the accounting records do not conform to budget classifications.

5. Lack of review of the adequacy or completeness of departmental accounting. The Comptroller General is given authority to "prescribe" accounting systems. Departments are at liberty either to keep accounts in accordance with his recommendations or otherwise, but no procedure has been instituted to determine whether his system or policy is being followed. Furthermore as the designer of an accounting system he is not in an independent position to comment on or appraise it

6. Lack of distinction between preaudit (examination of transactions prior to completion) and postaudit (independent verification of transactions after their completion). The Comptroller General does some preauditing of transactions, although the bulk of his examinations are made after the transactions are completed.

Duplication as to who is to be held responsible for expenditures. At the present time both the disbursing agent and the certifying officer are held responsible: the former according to the Comptroller General, and the latter according to a presidential order of 1935. The disbursing agent is not in a position to canvass matters relating to an expenditure concerning which a question may be raised. No attempt is made to put the responsibility for expenditures on the administrative officers charged by Congress with the authority to spend.

8. Lack of uniformity as to when an item becomes an expenditure. In some cases the cash advanced to a department or agency is treated as an expenditure of the appropriation of that activity. In other cases cash disbursements for specific items of expense constitute the expenditures. In other cases the expenditures are recorded and reported on an accrual basis, including both the cash paid and accounts payable.

9. Absence of any unified or central plan of reporting through which a consolidated financial statment of the Government can be compiled. Statements issued by the Treasury Department are on a cash basis only, and do not show adequately or accurately the financial position of the Government or with few exceptions any of its agencies.

10. Failure to use accepted standards and procedures in postauditing. The Comptroller General's office keeps a set of appropriation accounts of its own, which are not subject to verification. On the other hand, it does not verify the accounts of the departments and agencies but only checks their individual transactions. It requires original documents to be filed in its office, examines individual transactions rather than accounts, and only in a limited number of instances does it make field audits.

11. Absence of any general plan of checking the financial reports of the individual departments and agencies or of the Government as a whole. A number of governmental corporations have their accounts audited by independent accountants. For the most part, however, governmental accounts and financial reports are not independently verified.

12. The absence of an agency which may receive reports on the results of the examinations made by the Comptroller General and act thereon with reasonable promptness. The Comptroller General is required to report to Congress, but his reports have for the most part been limited to an annual document, often only typewritten, containing his comments on all governmental agencies. His comments frequently include items that should be acted on, but Congress has provided no means whereby these recommendations can be given consideration.

13. Incompleteness in the reports of the Comptroller General as the independent auditor for Congress to Congress itself. These reports consist primarily of irregularities found and do not include financial statements, comments on procedure and systems, or intelligent review of the financial and accounting policies and practices which every Federal agency should periodically receive.

14. The independent audit of many types of

transactions and agencies has never been provided for.

15. The work of the Comptroller General's office has not been kept up to date. Practically no verifications are carried out on a current basis and in many instances long periods of time elapse between the date of the transaction and its final review.

Faced with the difficulties of securing adequate and comparable information for purposes of budgetary administration and financial reporting, the President, acting under the authority given him in the Budget and Accounting Act, issued on August 13, 1940, Executive Order No. 8512. The order requires the several departments and independent corporations to furnish the Secretary of the Treasury such reports as will enable the Treasury Department to maintain accounting records and file reports described in the Order. The Secretary of the Treasury is required to furnish such reports as are required by the President or the Bureau of the Budget. The Order provides that uniform terminology, classifications, principles and standards shall be established by the Secretary of the Treasury with the approval of the Director of the Bureau of the Budget, and that all procedures shall coördinate with the accounting systems prescribed by the Comptroller General in accordance with his authority under the Budget and Accounting Act.

It is understood that in the time intervening between the issuance of that Order and the recent past, extended conferences have been held, participated in by the various offices, departments and agencies concerned with budgeting, accounting and reporting. As a result of these discussions two bulletins (mimeographed) have been issued jointly by the Bureau of the Budget and the Treasury Department:

Budget-Treasury Regulation No. 1 revised, June 1, 1942, relating to apportionments and reports on status of appropriations.

Budget-Treasury Regulation No. 2, June 30, 1942, relating to annual financial reports of governmental corporations and enterprises.

While the bulletins are issued by the two departments named, both bear the endorsement "I concur: Lindsay C. Warren, Comptroller General." They represent, therefore, a coöperative and composite effort of the three divisions of government primarily responsible for financial control.

Regulation No. 1 concerns itself exclusively with information required in connection with appropriations to departments. The first important item in its contents is a complete terminology in which all terms such as "allotment," "apportionment," "appropriation," "reserve," "obligation," are explained. This section of the document is important as it paves the way for the elimination of the lack of uniformity in treatment of various items which has prevailed in the past. The term "obligations" is used to cover all charges against an appropriation (or allotment, or apportionment) including both expenditures and outstanding items. A distinction is not made, in this respect, between encumbrances and expenditures, but the term "obligations" is used to cover all items which have reduced the free balance. Another section gives specific instructions as to the method of dealing with various types of obligations.

Departments are required to keep such accounts as will enable them to report on all matters covered by the bulletin. In this way the records of departments with respect to appropriations are directed toward uniformity.

A revised object classification of expenditures is incorporated in the bulletin. This classification proceeds in the right direction (in the writer's opinion) by reducing the number of classifications from twenty-seven, as previously employed, to sixteen under the new outline. The list appears adequate and logical.

The major part of the bulletin is given over to forms for the preparation and submission of apportionments and for reports on the status of appropriations. Forms requesting apportionments must show the status of previous apportionments and estimates for succeeding purchases in considerable detail. Forms for reports on the status of appropriations must show the status of each appropriation and apportionment, the aggregate of obligations incurred, expenditures to date, unliquidated obligations, and unobligated balance. A subsidiary analysis of obligations by objects is added.

The fundamental purpose of these forms appears to be to give the Bureau of the Budget, which is an agency of the President, information concerning the progress of operations of the budget. Obviously, it is the duty of the President and the Budget Bureau to see that the functions for which funds are appropriated are carried out and in the most effective and economical manner. It is to be assumed that the information provided in these reports will not be used to compel departments to spend less than the amounts appropriated unless the progress of the work so justifies. Such an attempt would be an usurpation of legislative powers by the executive branch.

Regulation No. 1 puts upon the spending departments a major additional burden, particularly in the way of reporting. The requirements of the Regulation should be beneficial to the departments in the way of improved internal budgets. The benefits to the government as a whole would depend largely upon the extent and effectiveness with which these voluminous reports can be used in the Budget Bureau and in the Treasury. If they can be promptly coordinated and reviewed, beneficial results should ensue which would reflect themselves in the general financial management of the government and in the available information concerning its financial operations.

Regulation No. 2 pertains to the financial reports of governmental corporations and enterprises. The bulletin calls for a balance sheet, and income and expense statement of each such activity, fifty-one in number at the date of the bulletin. Standard accounts for both of these statements are listed and contents described. Schedules correspond in the main to those commonly followed by similar private business corporations, allowing for the differences inherent in the type of organization and the relationships involved. This program supplements and extends the plan inaugurated by Senate Resolution 150 adopted in June 1939 under which the Secretary of the Treasury issued reports of all such agencies for the then fiscal year.

This bulletin does not seem to put on any agency any unreasonable requirement. Also it does not appear to put new work upon the governmental corporations and enterprises. All of these enterprises need for their own internal information and management all of the information required in these reports, and the form indicated would seem to make the reports satisfactory for their own use.

These regulations seem to represent an important step in the improvement of Federal accounting and reporting and should result in the elimination of a considerable number of the deficiencies already outlined. It is understood that the offices and departments concerned are giving further consideration to the development of general financial summaries showing the current financial status of the government as a whole. Until such a goal is accomplished, it can hardly be said that the financial reports of the government are on an adequate basis. That much more is to be done than that indicated in these regulations is obvious. There is need for reports not merely on what obligations

have been entered into and upon the present status of appropriations and the estimated future expenditures, but also on receipts and uncollected receivables. These must be added, together with information concerning cash balance, supplies on hand, and numerous facts concerning property and indebtedness must all be drawn together if the picture is to be complete.

A tentative plan for such summary financial statements together with the essential central accounts needed from which to compile such statements has already been proposed.[1] Much additional information is required in the central accounting office before such a system of reports can be inaugurated. Regulation No. 1 herein described provides only a small part of this information. It is only one step and at best rather a short one toward the goal of a comprehensive and complete reporting, but it is in that direction.

A word of caution may be in order concerning the program as outlined in Executive Order 8512 for a central set of accounts in the Treasury in addition to those kept by the department. Departmental accounts are a necessity and contain all of the basic information, if properly kept. It should not be necessary to do anything more in the way of central records than to keep summary totals from which consolidated financial reports can be compiled. The present Treasury officials, from the expressions they have made on the subject, apparently intend to proceed along that line.

It is presumed that the Treasury will keep all accounts needed under these procedures, and that no accounting system will be maintained in the Budget Bureau. Otherwise additional and needless duplication of records will result.

Executive Order 8512 sets the stage for a much more extensive program than is represented by these two orders. If the remainder of the program can be carried out with reasonable completeness it should result in overcoming largely if not completely the deficiencies outlined by the American Institute Committee having to do with accounting and budgetary control and with central reporting. If the program is to be made complete, however, the independent audit of the Comptroller General should be applied to these central accounts and to the financial statements compiled from them and from departmental records. Otherwise, even though the new procedure is obviously more complete and more accurate, the statements will lack the independent verification to make them fully acceptable from a public point of view.

It is sincerely to be hoped that the Comptroller General will recognize the significance and value of this program and cooperate fully in it. If, as in the past, he continues to attempt to present a financial statement of his own, compiled from his own records, such as that sometimes published by him, there will continue to be confusion because his reports will not agree with those produced under the new Executive Order. The latter, however, will always be more complete and accurate because they will include accruals and they will be based on proper accounting principles instead of merely on warrants issued and settlements allowed by the General Accounting Office.

The Comptroller General in many respects is the key to the whole matter. He must take his place as progressive leader and constructive critic of procedures, transactions, and reports, if an integrated and comprehensive program is to result. He has the authority and the independence required for this purpose, and no one else can carry out these phases of the program, and no part of the program can be fully

[1] See "Principles Involved in the System of Central Accounts for the United States Government," by Edward F. Bartelt, *N.A.C.A. Bulletin*, March 1, 1942.

carried out without his full coöperation. Congress, the President, the departments, and the public have a right to expect these things.

(Author's Note: An encouraging prospect as to a change of attitude in the General Accounting Office is indicated by the procedure recently approved for the audit of war contracts by that office, as described in the November *Journal of Accountancy*. Under the new procedure, such audits are to be made in the field from original records of contracts, thus eliminating the necessity of sending documents to Washington as has hitherto been required of government departments. This was one feature of the work of the Office especially criticized by the American Institute Committee, and it is to be hoped that this is a change which will be extended to the entire audit program of the Comptroller General.)

LLOYD MOREY

*University of Illinois*

RECENT GOVERNMENTAL ACCOUNTING PUBLICATIONS

Publications of the Municipal Finance Officers Association, Chicago:

*Municipal Budget Procedure and Budgetary Accounting* (February 1942, pp. 100. $1.00).

*Work Measurement in the City of Los Angeles Building and Safety Departments*, by Irving Tenner (December 1941, pp. 16. 20¢).

*Governmental Cost Accounting in the Los Angeles Area*, by Irving Tenner (December 1941, pp. 16. 20¢).

*Cost Accounting and Work Measurement in the Federal Government*, by Irving Tenner (May 1942, pp. 72. $1.00).

Publications of the National Committee on Municipal Accounting, Chicago:

*Municipal Accounting Terminology* (Third Edition) (June 1941, pp. 34. 25¢).

*Municipal Accounting Statements* (Revised Edition) (June 1941, pp. 206. $2.00).

*Governmental Accounting Bibliography* (Revised Edition) (June 1941, pp. 61. 50¢).

Other Publications:

*Municipals*, Committee on Municipal Obligations, National Association of Supervisors of State Banks (Washington, D. C.: Federal Deposit Insurance Corporation, 1941, pp. 108. $1.00).

The first title in the above list becomes Accounting Publication No. 9 of the Municipal Finance Officers Association's accounting series. It was prepared by Matthias E. Lukens, although no authorship is shown on the title page.

The topic of municipal budgeting has been well presented in a number of good texts. However, this short and compact manual, written especially for municipalities of 25,000 or more, is a distinct contribution to the field. After a brief introduction which outlines budgetary procedure in twelve steps, a model budget calendar is presented which coördinates the procedural steps with the time element.

Most of the text is devoted to a discussion of budgeting for the general fund. However, budgeting for the other usual municipal funds is treated briefly with a three page discussion being given to capital budgeting.

General fund budgeting is presented in the traditional three phases, namely, preparation, adoption, and execution. In the three chapters devoted to budget preparation the importance of the work program as being the basis of expenditure estimates is well brought out. A model work program is presented in the appendix.

Most works on budgeting recommend

the "accrual basis." Others advocate the "cash basis." This bulletin not only describes detailed procedures under both of the traditional bases but presents a very practical method of budgeting revenues on a "cash basis" and expenditures on an "accrual basis."

The chapter on adoption of the budget presents illustrative statements for the budget document and model ordinances for lump sum expenditure appropriations, detailed expenditures, tax levies, and a salary ordinance. Budget execution is considered as an activity of accounting control. Illustrative journal entries and ledger accounts demonstrate means of accounting control through appropriation, allotment, and encumbrance accounts. It is assumed the budgetary accounts are to be a part of the general ledger. However, the manual describes a simple system of budgetary control which uses memorandum allotments rather than ledger accounts. Control is maintained through monthly reports in which actual expenditures are compared with memorandum allotments.

The manual is written in a clear and concise manner with the technique of describing procedures in numbered steps being used to advantage throughout.

The second, third, and fourth publications, by Irving Tenner, are under the sponsorship of the Committee on Cost Accounting of the Municipal Finance Officers Association. These reports constitute Bulletins No. 1, 2, and 4 respectively of the Cost Accounting Series. Each is a descriptive statement of attempts at cost accounting and work measurement which are being made by the governmental organizations listed in the titles. The description is non-critical and no attempt is made to evaluate the cost work being performed.

The two bulletins describing Los Angeles cost accounting cover activities of the recreation, health, public works, building and safety, and water and power departments of the cities of Los Angeles and Pasadena. Cost accounting activities of the general hospital, a tuberculosis sanatorium, the health department, coroner's office, juvenile home, county jail, and detention camps of the County of Los Angeles are described.

The bulletin on cost accounting in the federal government is not intended to be exhaustive but merely to present cost procedures of certain selected bureaus and departments. From the table of contents which includes the Departments of Agriculture, Commerce, Interior, Justice, Navy, War, Post Office, Treasury, and Labor, as well as the Government Printing Office, Social Security Board, and a number of government owned corporations, the reader may be agreeably surprised to learn that cost accounting has been so widely adopted by the Federal Government. However, the definition of cost accounting provided by Mr. Tenner perhaps furnishes an explanation. Early in the introduction he states, "the term 'cost accounting' is used in this bulletin in a broad sense to include also functional accounting, that is, accounting systems which provide for the classification of expenditures by functions. This is true even if general expenses common to all functions are treated as a class by themselves and are not allocated among the other functions."

Even though one is not willing to accept so broad a definition of cost accounting, the bulletin presents some very interesting descriptions of accounting activities of various departments of the Federal Government. It is necessarily brief and does not include great detail for any department.

The fifth, sixth, and seventh publications are revisions of three well known bulletins of the National Committee on Municipal Accounting. ***Municipal Accounting Terminology*** shows less change from the first edition than the other two.

A number of additional terms have been included and a few infrequently used titles have been deleted. Definitions have in many cases been more clearly stated and the page layout improved. The terms defined are printed in black-face type rather than light-face capitals and the listings are carried two columns to the page. The improved printing greatly facilitates its use. The booklet is published as Bulletin No. 11 of the National Committee's series and is also included as Part IV of Bulletin No. 12.

Although Bulletin No. 12, ***Municipal Accounting Statements***, follows the same chapter headings as the first edition, it has been completely rewritten with the text material being expanded more than twenty pages. In general, only minor changes in statements have been made. The principal change is the introduction of a new statement under the title, "Summary of Budgetary Operations." In the first edition the statement, "Analysis of Changes in Unappropriated Surplus," presented a three-way comparison between actual and estimated revenues and expenditures. This information is now presented under the new title, "Summary of Budgetary Operations." The matching of actual revenues and expenditures is shown in the statement, "Analysis of Changes in Unappropriated Surplus."

Statement layout as a whole has been somewhat improved, although it was not to be criticized in the first edition. Where numerous details are to be included, such as the many expenses of a utility operating statement, it is recommended that supporting schedules be used. Part IV of the old edition, "Explanation of Accounts," has been omitted. This topic is amply covered in the text and in the section on terminology.

This bulletin should be a part of the library of every governmental accountant.

*Governmental Accounting Bibliography*, Bulletin No. 13, is the revision of the *Bibliography of Municipal and State Accounting*. As the change in title suggests, it has been expanded to include listings on Federal Government accounting. Old references have been retained with enough new ones added to more than double the size of the bulletin. References are classified into the following sections, (1) Accounting for Cities, Towns, and Villages, (2) Counties, (3) Schools, (4) States, (5) Federal, (6) Bibliographies, and (7) Current Periodicals. Each section is divided into sub-sections covering such topics as, general accounting, cost accounting, special assessment and tax accounting, utility accounting, machine methods, budgeting, reporting, auditing, uniform accounting, history, and terminology. Including some repetitions, there are approximately 800 references in this bulletin.

Instead of the usual copyright line, the volume, ***Municipals***, has the following: "No rights reserved. This volume may be reproduced in whole or in part by any person or organization." Thus, the Committee on Municipal Obligations encourages wide use of its work.

The purpose of the book is to present a six page form which the committee terms a "Uniform Credit File for Municipals." This form was developed after it was determined to be impossible to design a system of uniform "classification," "grouping," or "ratings" for municipal securities. The report states that it has attempted to do two things: "first, to present a clear, logical, and yet brief outline of the more important factors to be considered in evaluating the risk of default on municipal obligations, . . . and second, to prepare a credit file form which may be actually used for presentation of desired information in connection with the analyzing of the obligations of the average county or small city."

Part I, "Municipal Credit Reports," presents the Uniform Credit Form. It is a

statistical questionnaire providing for the following types of information: "Statement of Debt," both funded and floating; "Debt of Overlapping, Coterminous, and Underlying Units"; "Summary of Full Faith and Credit Debt"; "Default Record"; "Assessed Values"; "Property Tax Rates"; "Tax Collection Record"; "Receipts and Disbursements"; "Sinking Fund Operations"; "Future Debt Service Requirements"; "Management and Services"; "Economic Background"; and "Other Information." Space is provided for data covering the last five years.

A report containing such information would be of great value to bankers and other investors in municipal securities. It is unfortunate, however, that municipal reports in general are insufficient to provide such data. Were municipal reports prepared according to the recommendations of the National Committee on Municipal Accounting as presented in the bulletin reviewed above, all accounting and statistical information required by the credit form could be readily obtained from the annual report.

The use of the form is demonstrated in the analysis of Orangeburg, S. C., Greenwood County, S. C., and Pasadena, California. Comments on the analyses were written by Edward A. Wayne.

Part II, "Municipal Credit Analysis," prepared by Harry L. Steverson, discusses fundamental considerations in evaluating general credit obligations. Its chapter headings are (1) "Classification of Municipal Obligations," (2) "Nature of Credit Analysis," (3) "Economic Background," (4) "Administration and Fiscal Policies," (5) "Adequacy of Revenue," (6) "Size of Debt," (7) "Special Obligations," (8) "Conclusions." This section presents clearly and concisely the fundamentals of municipal investments as usually presented in standard texts on bond investment. The appendix contains a tabulation of the municipal holdings of insured banks, a list of suggested questions for use in analyzing municipal credits, and a bibliography.

W. H. Read

*Washington, D. C.*

RECENT PUBLICATIONS ON COSTS

*Statistical Cost Functions of a Hosiery Mill* (Chicago: The University of Chicago Press, 1941. Pp. ix, 116. $1.00).

*The Relation of Cost to Output for a Leather Belt Shop* (New York: National Bureau of Economic Research, 1941. Pp. viii, 72. $1.00).

*The Long-Run Behavior of Costs in a Chain of Shoe Stores* (Chicago: The University of Chicago Press, 1942. Pp. 54. $1.00).

Between economic theory and business practice there is a deep and as yet unbridged gulf. The economist evolved a theory of how the rational businessman maximizes his profits; but this theory, however unassailable it may be logically, does not fit the facts of business practice very well. For this shortcoming economists used to lay the blame on the businessman, saying either that his behavior was not rational, or that he did not aim at maximizing profits. Only recently has it begun to be realized (since businessmen failed to reform themselves) that the economist may be the one to be blamed: he may have oversimplified his theory, and that he should learn something of the businessman's trade before theorizing about it.

Professor Joel Dean's three monographs under review are a welcome step in this direction. They are statistical analyses from the economist's point of view of the various elements and aspects of the "expenses of production an entrepreneur incurs in operating an enterprise." Of the three studies the first two, *Statistical Cost Functions of a Hosiery Mill* and *The Relation of Cost to Output for a Leather Belt Shop*, are similar in aim and method. Both

are concerned with the effect of short-run variations in output on total, average, and incremental cost. In order to segregate this factor (cost-output variations) from others, they analyzed the operation through time of a single plant whose equipment and technical methods remained unchanged over the period, eliminating statistically the effect on cost of changing wages, changing raw-material prices, and similar factors. The relationship between output and cost is shown in the form of scatter diagrams and curves mathematically fitted to the data; and the analysis is carried out separately for direct, overhead, and combined cost, as well as for certain cost components, such as salaries, supplies, repairs, etc. Both studies arrive at the same conclusion: total cost increases linearly with the rate of output. This implies that incremental or marginal cost is the same at all levels of production and that average cost falls as production increases since fixed costs are spread over a larger output.

The third monograph, *The Long-Run Behavior of Costs in a Chain of Shoe Stores*, published jointly by Professor Dean and Mr. R. W. James, is concerned with a somewhat different problem. It seeks to show the effect on cost not of short-run variations in the output of a plant of given capacity, but of changes in capacity and equipment itself. For this purpose it analyzes for the same year the operating costs of the several retail stores of a large shoe chain. Since the different stores operate under similar conditions, in the same city and under the same management; and since they sell the same kind of shoes at the same prices, it is assumed that variations in their selling costs are mainly due to differences in size. This assumption is well borne out by the statistical analysis. The latter is based on data for 1937; and it is duplicated for 1938. It consists in a regression analysis of (the logarithms of) the operating costs of the different stores on (the logarithms of) their turnover. The analysis is carried out separately for total and average costs and for certain cost components (viz., selling, handling, and building expenses, and total salaries). Scatter diagrams are shown and curves (second degree parabolas) fitted for each case. The main result of the investigation is that selling costs per unit fall at first and then rise with increasing turnover. The point at which selling costs are lowest and profits highest lies at an annual turnover of about 33,000 pairs of shoes.

All three monographs give an excellent description of the relevant characteristics of the enterprises studied, and of the technical and statistical problems encountered in the course of the analysis. This should be invaluable not only to the statistician, for whom the authors have broken a new path, but also to the theoretical economist, who can find in these problems and descriptions just the kind of information he is most sorely in need of. But what is the value of the *results* of these studies? Do they tell us anything new, anything that will help the businessman to conduct his business, or the economist to understand and rationalize the businessman's behavior?

Let us examine the last study first. It is evident from the scatter diagrams that the shoe chain in question had no stores of optimum size, nor anywhere near it. Consequently, the result that stores selling at the rate of 33,000 pairs would be the most economical must have been new to the firm. But is this knowledge likely to be useful to management when it frames its future selling policy? One might think at first that it would be in the firm's interest to standardize the size of its stores at, or near, the optimum level. It should amalgamate its smaller stores and split the larger ones in order to approximate the optimum size as nearly as possible. If it is expanding, it should space its new stores in such a way that each one approximates

optimum capacity. This indeed would be the best policy for a monopolist, whose sales are fairly independent of the spacing and size of his stores, because if he does not go to the consumer, the consumer—having no other choice—will come to him. But for the competitive producer this is not the case. If he wants to maintain his sales, he must have a store in every shopping center or wherever his competitors have stores. It may well happen, therefore, that by converting his stores into optimum sized ones, the competitive producer would reduce not only his selling costs but also his total sales, and would lose on the roundabouts what he gains on the swings.

This consideration shows, first of all, that the authors' results are of a very limited value to the businessman. They would be useful to him if supplemented by an equally detailed analysis of the effect of size and location on sales. Without that he may just as well base his policy on a simple comparison of the accounts of his different stores; for a chain is not made stronger by reinforcing only one of its links, which is not the weakest. From the economist's point of view the above considerations show that the cost curve derived by the authors is not a cost curve in the commonly accepted sense of the term, because it does not fulfil the condition that cost curve and demand curve must be independent of each other.

Let us consider next the result of the first two studies. The short-run cost curves derived from the data are true short-run cost curves as defined by economists. Their particular shape, indicating that short-run marginal cost is the same for different production levels in the industries analyzed—and presumably in many others as well—is a novelty to the economist and a very interesting one. The simplicity of this result, however, suggests that it is no news to the businessman. But even if it were, what use could he make of it? It is well known that short-run marginal cost does not play the important role in the businessman's decisions that economists attribute to it. Institutional factors require that the businessman should set his price not for a moment but for a period of time. Consequently, the particular way in which his costs fluctuate during this period can be of no interest to him. He knows from his accountant what his average costs for that period are likely to be, and he must know the possible savings or additional expenses he would make by adjusting capacity to a change in price. This is all he needs to know about cost for maximizing profits.

The businessman or the accountant, therefore, will find these studies disappointing. For his benefit they contain descriptions of the theoretical concepts lying behind the statistical analysis; but he may well ask the relevant question, what is all this good for? The authors' aim was, of course, not to criticize the economist's concepts but to give them real content. Nevertheless, they had a unique opportunity of viewing economic theory in the light of practical problems, and this should have made them more critical in their choice and interpretation of the concepts analyzed. In fact, their description and shrewd observations of the producer's practical problems should prove invaluable to economists for developing and reinterpreting their theory, even though the authors themselves have not made as much use of their own information as they might have done.

T. de Scitovszky

*Washington, D. C.*

*Statistical Cost Functions of a Hosiery Mill.* Joel Dean. (Chicago: The University of Chicago Press, 1941. Pp. ix, 116. $1.00.)

Cost accountants have been, it seems to many economists and businessmen, unduly concerned with the determination of total and of average costs and with the assignment of overhead costs to classes and

units of product. In their preoccupation with these techniques, they have all but neglected the crying need for refinements in the measurement of incremental or marginal costs (and revenues). Average costs, it is well known, have definite though limited application for businessmen and for the determination of periodic income, but in the solution of one of the outstanding managerial problems—the determination of optimum short-run output —they are practically without value. Economists are devoting more and more attention to the questions of output; nevertheless, their analyses are little more than descriptions until businessmen are able to measure the necessary factors entering into the calculations. Professor Dean, an able economist and a reasonably cautious statistician, has supervised and written a number of studies, of which this monograph is one, dealing with the measuring of cost relations.

Mr. Dean embarks on this study with the purpose of finding a "quantitative relation between the cost of operation . . . and those aspects of operation which influence cost." The operating data for the knitting department of a hosiery mill covering the period 1935–38 are used as the basis for the study.

The statistical method employed is quite simple in principle, though numerous complications requiring questionable assumptions arise before the study is completed. Cost is, of course, the dependent variable, but the selection of significant independent variables turned out to be quite a problem. The most important variable influencing cost is certainly output, but others which must be considered are style variation, differences in specifications, seconds, spoiled work and its replacement, transfers of partially completed work, changes in the rate of output, labor turnover, and still others.

Scatter graphs were made between output and combined cost, productive labor cost, non-productive labor cost, and factory overhead. Regression equations were determined and corrected, and if one is not too concerned with considerable scatter and poorly distributed samples which might invalidate the results, the relations seem to be linear. For simplification certain costs were omitted: general overhead for the system of mills is not included and silk cost, which for this mill is apparently proportional to output (though one would expect a slightly higher per cent at higher output levels due to spoilage, etc.) is omitted. It is, of course, no difficult task to add this item as a constant unit cost after the other computations are made. Factor costs were reduced to a base figure and indexes, with which the cost function may be modified, were computed for each component of combined cost. Total combined and component costs by months were determined as a function of output, and the marginals checked by differentiation. Final estimates show constant marginal costs for the output range studied, and due to a small amount of fixed costs, the average costs have a slight negative inclination.

Since marginal cost is comprised of the extra costs made necessary by the output of additional units, the accountants' account balances, which are totals and in some cases totals built up by summing average allocations, had to be modified considerably. This problem was complicated further by the fact that accountants often expense items in the current period when the output which made the expenditure necessary—or more accurately the output which should benefit by the expenditures—is often produced in future periods. Building repairs, which are often made during slack periods are an outstanding example. Nevertheless, one may question the definition of production which permits the statement (p. 108) that, "the cost of building materials is not properly a production cost." Depreciation is neglected since the firm used a method inde-

pendent of output, and use depreciation—as usual—proved difficult to compute.

Professor Dean's work is extremely interesting and it is no doubt worth while. Its value lies, not so much in its direct benefit to practical businessmen as in its focusing of attention to the need for reasonably reliable estimates of output determinants. The lack of practical applicability is made evident by the controlled selection of a specific division of a hosiery mill—an enterprise selected because it is of much less than average complexity in regard to number of processes and joint products.

While the scatter-graph technique is certainly not new in this area—Knoeppel, Pinkerton, and others, have been advocating its use in connection with fixed-variable analysis for some time—the implied assumption of linearity (that each expense remains a constant per cent of sales or of output) has not been given careful attention by the practical man. The general failure of cost accountants to improve and apply these devices widely is regrettable, since the businessman's orthodox approach is badly in need of supplementary aid. The use of flexible budgets and the courage to disregard the cost accountant's intricate allocation of fixed overhead for output decisions are highly commendable but the aid of statistical techniques, even though meager, is to be warmly welcomed.

Carl Thomas Devine
*Johns Hopkins University*

*No Royal Road: Luca Pacioli and His Times.* R. Emmett Taylor. (Chapel Hill: The University of North Carolina Press, 1942. Pp. xii, 445.)

Almost twenty years ago, I argued that persons who wrote on bookkeeping were in many cases distinguished in other activities. Among those cited were: Grammateus, a mathematician "unquestionably in the front rank of his time"; Cardan, astrologer, scientist, mathematician, and professor of medicine; Savary, father of the great French code of 1763; Stevin, inventor, engineer, soldier, and statesman; Hutton, Fellow of the Royal Society; Hamilton, banker and professor of mathematics; and Arthur Cayley, president of the Royal Society.

First of all I mentioned Paciolo, stating that he had been a professor in more than one university, and quoting the rather faint praise of one who described him as an "important, if not a great mathematician." Now comes corroborative evidence in regard to Paciolo, for Professor Taylor, relying on contemporary records, shows that he was indeed a highly distinguished scholar.

Thus Caetani wrote to a friend that Paciolo was "a most accomplished master in the secrets of theology, and a wonder of our times." And to another friend he described Paciolo as "a man of sound, rare, and refined learning, and an excellent lecturer in sacred theology . . . the man without a peer in philosophy, theology, and mathematics." He also compared him favorably with Homer, Demosthenes, and Aristotle and continued by styling him "a man of the rarest pattern and almost unique. But it is too arduous a task to convey praises commensurate with the man. . . . It is not possible to recount the many glories of the man's learning."

Another letter writer, Francesco Massario, says of Paciolo: "I do not wish to recall minutely how many excellent qualities are in the man, how much genius, how great a memory, what an abundance of material and profound appreciation of learning, because his volumes make him enough distinguished and his public lectures, at which we both have been present, bear witness."

If one is inclined to discredit these three letters, as too similar to the blurbs on the dustcovers of present-day publications, it is well to remember that a prophet is least

likely to be honored in his own country and by his contemporaries. And surely, it is a remarkable performance for a Franciscan friar to teach military science, one of his students being "the great military leader," Trivulsio.

Additional testimony to the effect that one who deals with bookkeeping may be eminent in other fields is found in the fact that so scholarly a piece of historical research as *Luca Pacioli and His Times* should have been written by one who teaches bookkeeping. (I believe the author's official title is Professor of Accounting, but I am not sure of the distinction between bookkeeping and accounting.)

The title of the book is well chosen, for it is much more than a life of the protagonist. Description of the customs of medieval Italy, sketches of contemporaries, ranging from popes to condottieri, analyses of philosophical doctrines and political events are all included. These are based on original documents and a wide study of histories and biographies. And the surprising thing is the interesting way in which the results of the research are described. In proof whereof I may state that my wife and I, neither of whom has been particularly interested in fifteenth century Italy, between us read the entire book aloud. And in these crowded days one does not take time to read aloud an historical treatise of 399 pages unless it possesses real interest and literary charm.

Those of us who are more interested in bookkeeping (*scilicet* accounting) than in medieval history—and probably most of the readers of the REVIEW are like me in that respect—are concerned more with Paciolo as author of *De Computis et Scripturis* than with his work on perspective, his edition of Euclid, his philosophical and religious discourses, his *Divina Proportione*, or even his work on chess. Perhaps we regret that Professor Taylor has not given more space to bookkeeping. The regret would be greater were it not that the bulk of the book, though not dealing with our own narrow *Fach*, is so very interesting. The allocation is, however, fully justified by the fact that Paciolo's "Tractatus xi" on bookkeeping is really so small a portion of his writings, and represents an insignificant part of his activities.

Professor Taylor discusses the bookkeeping text in Chapter 6, entitled "A Guide for Merchants." In this he does not attempt any lengthy translation, but gives merely a paraphrase and summary. It is to be regretted that in a few instances he has followed Crivelli's faulty translation, a procedure, as unnecessary as it is unfortunate, in so skilled a linguist as the author. He is to be congratulated on correcting the error, made by both Geijsbeek and Crivelli in construing Paciolo's second requisite of a good merchant that he be a "good accountant," instead of being one versed in arithmetic, or a "ready reckoner."

An entire chapter is given to refuting the charge that the *Divina Proportione* was a plagiarism. But no refutation is attempted of the accusation that the *De Computis et Scripturis* was also plagiarized. This has been made by several authors and one of them, Fabio Besta (*La Ragioneria*, 2d ed. Milan 1922, vol. iii, p. 376), even ventures to suggest the name of the original author, Troilo de Cancellariis. To readers of the REVIEW, Professor Taylor's expert appraisal of this accusation would have given additional interest to his scholarly work.

HENRY RAND HATFIELD
*University of California*

*Survey of American Listed Corporations*, 7 vols. & supp.; and *Statistics of American Listed Corporations*, 2 vols. (Washington: Securities and Exchange Commission.)

The *Survey of American Listed Corporations* and the *Statistics of American Listed Corporations* give to the student of the

corporation a wealth of financial information never before generally available. The fundamental data for these compilations are the annual reports filed with the Securities and Exchange Commission by corporations under the Securities and Exchange Act of 1934.

The *Survey* contains basic financial material for 960 individual companies, in 61 narrowly defined industries. The reports fall into two groups. The first group, containing 757 corporations classified into 52 industrial divisions, has data covering the years 1934 through 1939. The second group consists of reports on selected defense industries covering the years 1939 and 1940. Nine new industrial groups containing 203 concerns have been added in this set of reports; and 372 corporations in 18 groups previously reported are also included in the selected defense industry studies.

Each individual corporation is represented in these reports by a balance sheet, profit-and-loss statement, and surplus reconciliation, as well as data on parent and subsidiary relationships, and on remuneration of company officers. In addition, all individual balance sheet items are given as a per cent of total assets, all individual profit-and-loss items as a per cent of total sales, and certain financial and operating ratios are computed for each company, while each individual security issue of each company is described. In general, financial figures are based on the consolidated statements of the corporation and its subsidiaries. All these items are given for the years 1934 through 1939 for companies in the first group discussed above, and for the years 1939 and 1940 for those covered in the special studies of defense industries.

The balance sheets, profit-and-loss statements, and surplus reconciliations are taken from data furnished on S.E.C. form 10K, and are detailed enough for most purposes of financial analysis. No attempt has been made, in general, to assure uniformity of content in the various accounts as between different reporting corporations over and above that which would result from each individually following standard accounting practice. The financial ratios shown are the current ratio, the quick ratio, net worth to total debt, long term debt to fixed assets, fixed assets to invested capital, and the turnovers of receivables, inventories, working capital, fixed assets, and net worth. Six operating ratios are also shown: net profit after all charges to tangible net worth, net profit before interest to invested capital, depreciation and depletion to fixed assets, depreciation and depletion to sales, maintenance and repairs to fixed assets, and maintenance and repairs to sales.

Industry totals and ratios, as well as individual company figures, are presented. These combined statements, however, do not always cover the same span of years as do the data for the individual company in the first group of reports. For 42 industries, comprising the first five volumes of the *Survey of American Listed Corporations*, composite financial and operating statements are given only for the years 1937, 1938 and 1939. For the other 10 industries in the first group, containing 234 corporations, composite statements are given for all the years 1934 through 1939 for which data for all concerns in the industry exist.

About 85% of the concerns in the *Survey* are in manufacturing industries. Some mining industries and the chain distribution trades are also represented but financial corporations and public utilites are expressly excluded, since reports of their financial status are generally published by other government agencies.

The two volumes of the *Statistics of American Listed Corporations* present an analytical summary of the individual corporation data. The first volume contains

information on the interrelations of financial items with each other and with such variables as corporate size, industry, and capital structure—for the one year, 1937. The coverage of this report is much greater than that of the *Survey;* it includes 1,961 corporations, or all companies which had securities effectively registered under the Act as of June 30, 1938. Thus, it includes industrial groups, which were specifically excluded in the *Survey*—finance and public utilities. Detailed financial data are presented for only 1,741 of these registrants which were not affiliated with each other. These 1,741 registrants had $65 billion total assets, or about 43% of the total for the corresponding industries in the *Statistics of Income* for 1937. Since the *Statistics of Income* gives corporation reports on an unconsolidated basis, the actual proportion of total assets held by the listed corporations dealt with in this volume is slightly over 50%.

In addition to descriptive information giving the distribution of the registrants by industry and total asset size, the tables presented in the volume fall into three groups. The first group deals with security issues of the registrants. Here there is such data as issues classified by industries, and by asset size groups of issuing corporations, by size of issues; distribution of maturities of funded debt cross-classified by similar characteristics and various characteristics of common and preferred stock issues for each industry, each asset size group, and each size group of issue.

The second group of tables deals with the capitalization patterns of the reporting corporations. The relation of capital leverage (the ratio of funded debt and preferred stock to total capitalization) to profitability, industry and total asset size are set forth in this series of tables.

The third group of financial statistics covers the several financial and operating ratios listed above. Frequency distributions for each of these ratios cross-classified by industry, by size, by income leverage, and by capital structure are given. In some cases cross-classifications by sales size and by profitability are also used, and classifications by both size and major industry group—manufacturing, trade, mining, etc. —are given.

The second volume of the *Statistics of American Listed Corporations* displays its statistical materials to indicate the changes in the financial statements of the registrants through the period 1935–39. The coverage of Volume II is slightly smaller than that of Volume I, due to the necessity of using concerns for which data were continuously available in this period. Thus the reports of 1,495 corporations with $62 billion of assets form the basis for the tabulations presented in this volume.

Financial statements for identical registrants combined by industry groups are given for each year, 1935 through 1939. Similar tables are shown for registrants combined by total asset size groups, and by capital structure.

In addition, five financial ratios—net profit after all charge to tangible net worth, net profit before interest to invested capital, the current ratio, net worth to total debt, and net sales to net worth—are given for each of the years covered. These ratios are cross-classified separately by industry, by total asset size, by sales size, and by capital structure.

These studies offer rich material for many kinds of analysis of corporate financial statistics. In particular, the *Survey* tabulations and the second volume of the *Statistics* provide the basis for studies of corporate financial behavior, both with the aid of ratio analysis and the sources and application of funds technique. The material in Volume I of the *Statistics* will be useful in analyzing interrelations of corporate financial structure—how, for example, the use of bank credit is related to

the use of trade payable, or how the use of long term debt is related to corporate size. Questions relating to the variation of corporate profits, both over time and between different types and sizes of businesses can be pursued with the aid of these surveys. Pioneering studies in these fields have already been made by the Financial Research Staff of the National Bureau of Economic Research.

Until the publication of these volumes, the major published source of comprehensive corporate financial data was the *Statistics of Income*, which, although nearly complete in coverage, suffered from many serious faults. Year to year comparability in the Internal Revenue figures is poor, due to frequent changes of classifications. Moreover, the unconsolidated basis of reporting results in figures which are for many purposes meaningless, and which include much duplication. The *Survey* and *Statistics of American Listed Corporations* provide data, which, although of limited coverage, are of far higher quality than those otherwise available. (The Federal Trade Commission Industry Studies also present a fairly large body of financial statements, but unfortunately only industrial totals are given; neither size breakdowns, frequency distributions, nor individual company figures are shown.)

In one respect, however, these volumes suffer somewhat in comparison with the *Statistics of Income:* the frequency distributions of financial ratios are classified by size, and by industry group separately. A cross-classification by both characteristics would facilitate much sharper and more valid analysis of the relation of those two factors to corporate financial practices.

It is to be hoped most earnestly that the publication of these Surveys, or of comparable data on a similar basis, continues.

CARL KAYSEN
*Office of Strategic Services*
*Washington, D. C.*

*Branch Banking, Its Historical and Theoretical Position in America and Abroad.* John M. Chapman and Ray B. Westerfield, with special chapters by Gilbert E. Jackson and Maurice Megrah. (New York and London: Harper & Brothers, Publishers, 1942. Pp. xi, 431. $4.50.)

This volume is both a history and an argument for branch banking. The historical sections are interestingly organized around the main issue and pointed to show the attitude of the public toward unit and branch banks. The authors show that active opposition to branch banking is of recent origin, arising around the turn of the century in the midst of the anti-trust movement and continuing down to the present day. Prior to the Civil War, branches were quite well developed in many sections of the country, especially in the South. The Civil War and the wreckage caused by it did much to demolish the Southern banking structure. Then came the National Banking Act which did not expressly prohibit branch banking but was so construed by the Comptroller of the Currency.

The tax on state bank notes was the occasion for state banks going national, dropping their branches as they did. Thus branch banking disappeared without any active opposition to it. A change in public opinion occurred toward the beginning of the twentieth century when economists and publicists began to espouse branch banking to serve new communities. This soon aroused violent opposition which has continued until the present day. The present status of branch banking is discussed in Chapter V. After this history, the authors analyze in considerable detail the comparative ability of the unit and branch banking systems to serve the public. Since they are obliged to compare the existing banking system with a putative branch banking system, their conclusions

rest on a less firm foundation than in the historical sections. When, for example, losses and bank failures under the unit system are compared with those under branches located in Canada and abroad, the American system does not show up so well. It seems that Canadian banks were able to absorb losses by closing branches and without disorganizing the banking structure. The losses were shifted, under branch banking, to the bank stockholders. The authors do not show, however, that actual losses taken by Canadian banks in agricultural areas, for example, were less than those taken by American banks. They simply show that the depositor lost more, as one might expect.

It is contended that branch banking would provide more fluid movement of funds so that rates would be more equal in all parts of the country. Under the existing system, it is claimed, some sections might have a surplus while others had a dearth of funds. The argument does not, however, appear to give due consideration to the function performed by the Federal Reserve System and Federal Loan Agencies in overcoming these deficiencies in recent years, even though the authors do show that the Federal Reserve has equalized interest rates. Their statement that "the survival of the unit banking system is closely related to the correspondent system" (p. 164) contains a large element of truth, but is not as significant as it might be for the present time.

The common view that the branch banking system would deprive local communities of needed funds is criticized severely. The authors maintain, quite correctly, that if funds can be profitably invested the branch bank will do so, but there is no good reason why funds saved in a particular spot should be invested there. This argument seems dated since banks have large excess reserves at the present time and are operating heavily in the government bond market.

Convincing arguments are brought forth to show that it would not be difficult to obtain local loans under branch banking, and that branches would have considerable autonomy in making small and medium sized loans, only large loans being referred to the home office. It is also shown that the branches would employ statistical staffs to enable them to judge economic conditions and investment positions. The argument that the branch bank would be interested in developing the local community is well made but since the subject matter is permeated with so many intangibles of a sociological and psychological nature it is hard to know whether the contentions of the opponents of branch banking do not have some validity. Nor do the authors give due weight to the argument (p. 222) of the "intransigeant advocate of unit banking" that it was a good thing that some communities should have been developed by banks which failed in the process. The authors simply assume that the alternative was some other form of safe investment whereas it might have been a stagnant condition of industry and employment.

The American tradition of the independent small business man who is a power in his own community is worthy of more serious consideration, for it is one of the profound political and psychological considerations which make bankers prefer the unit system. Owner-operators and owner-managers do not relish becoming employees of a large institution with headquarters in distant financial centers. They desire the independence of feeling and action which they can have as unit bankers. They would rather draw their salaries and dividends, and make opportunities for their families in their own banks than become employees of institutions managed in far-off centers. Whether such ambitions should be gratified is another matter, but

unless it can be shown that the unit bank is at present unable to perform its functions, it is likely to remain the dominant unit in the American banking picture.

To this reviewer it appears that not enough attention is devoted to developments of recent years. True, some of these events are discussed in statistical and factual terms but their implications for the "branch controversy" are not given due weight. Mention has been made of the effect of the Federal Reserve System upon mobility of funds; it must be added that the Federal Deposit Insurance Corporation has removed the depositor's fear of loss while the substitution of government bonds in the portfolios of banks for other loans and securities has further minimized the loss problem. Indeed, the development of the banking system as a depository for government bonds has such revolutionary implications for the banking structure that it transcends the question of branch and unit banking.

Although it is maintained in the main text that competition would continue under branch banking, it is interesting to note that Mr. Jackson in discussing the Canadian system emphasizes that the banks do not compete "by cutting rates and charges" (p. 337), but only by offering better services. Diminution of the number of competitors will certainly make it easier for those remaining to get together; why, then, is there not some basis for the fear that branch banks could more easily institute rigid interest rates than a competitive system containing thousands of unit banks?

On the whole, the volume makes instructive reading in the operation, functions and public relations of banks, aside from its contribution to the branch-banking question.

WALTER A. MORTON

*University of Wisconsin*

*Auditing Theory and Its Application.* Arthur Warren Hanson. (New York: McGraw-Hill Book Company, Inc., 1942. Pp. 488. $4.00.)

This book, a third revision of *Problems in Auditing*, represents in the main a collection of cases or problems for an elementary course in auditing supported by a condensed textual outline. It is not a complete work on auditing and would not serve as either a reference book or "refresher" for the practitioner. In my opinion, the text has not received sufficient emphasis for the purpose of an auditing course.

The cases seem to be well presented and generally to cover important auditing matters. This method of teaching should undoubtedly produce graduates with a better grasp of auditing technique than only a study of a treatise on auditing procedures, although a study of both would seem desirable. Most practitioners will agree that graduates of business schools are weak in knowledge of auditing problems and mechanical skill, lacking in auditing judgment, and have no balance or perspective; they are generally stronger in accounting theory. The relatively simpler problem of organizing and presenting a course in accounting theory may partially account for this situation, but possibly it is true that the presentation of auditing courses has not received adequate thought and consideration. In my judgment, entrants to the profession of public accounting need a more thorough audit training than can possibly be given in one semester.

One subject that should receive emphasis in auditing works, but which is generally neglected, is internal control. Supplementing this study should be a treatment throughout the work of the influence of internal control on the scope of auditing procedures in given cases; this subject demands judgment and under-

standing to a high degree, but should be within the capacity of college students in at least an elementary way. Actually many practitioners are but remotely acquainted with this subject. I recently heard two well known practitioners deny in open meeting that internal control has any general relationship to the scope of an audit. Insofar as I am aware, there are no works on auditing that show how internal control should be studied and used as a basis for establishing an adequate but sufficiently extensive audit program. Another need for a knowledge of the subject of internal control, as well as accounting systems, relates to the value of the auditor to his client in making constructive suggestions—a value that is often more appreciated than the value of an audit.

As this book is deficient in surveying the subject and uses of internal control, it is weak in explanation of the types of fraud that require internal control and that also must be forever in the auditor's mind in developing his audit programs and clearly establishing his responsibilities with his clients. Almost lacking altogether is any mention of detailed auditing procedures and how these procedures should be related to specific weaknesses in internal control and possibilities for fraud.

In its "balance-sheet audit" approach, this book does not give adequate emphasis to the importance of the audit of income. Most modern audits are made from the viewpoint of either the investors or the management, or both, in which the questions relating to determination of income are extremely important. Many of these questions are concerned with the sound application of generally accepted accounting principles such as relate to cost accounting, inventory valuation, depreciation, and liability reserves. Perhaps the author intentionally reserved treatment of such matters for other courses, although he devotes attention to certain matters of accounting principle of no greater importance, such as classification of surplus. The problem of the audit of income defies standardized approach and is undoubtedly most difficult. The analytical procedures of measuring the overall reasonableness of various assets and liabilities, and the study of the relation of income factors and their trends and the use of such facts in determining lines of investigation (including "balance sheet audit" procedures) should be susceptible of study by college students, and such study, on a case basis, should assist in developing good audit judgment.

Within the more usual treatment of "balance-sheet" audit procedures it is believed that some attention should have been given to the technique of circularizing debtors, and more attention should have been devoted to problems relating to verification of costs used for inventory pricing and investigation of manufacturing cost principles.

The book has the merit of reproducing a model set of audit working papers for a small manufacturing company; it also requires preparation by the student of a set of working papers through a series of related problems. The model working papers possibly reflect an average standard, but would be greatly improved through inclusion of more complete comments on source of information, scope of audit (and reasons therefor), and conclusions reached.

When considering the practicality of audit problems, it is suggested that good problems should be designed to develop judgment and perspective by calling implicitly for emphasis on major points and subordination of minor ones. For example, in no case should the student be expected to make minor audit adjustments for the sake of principle. In practice, principle must constantly be considered in connection with materiality.

While of no great importance, an apparently sober statement is made by the

author that the accountant's services are so broad "that frequently they are looked upon as business doctors, ready, able, and willing to cure all afflictions to which modern business is a prey." It is not considered that most business men believe such to be true, or that competent accountants pretend to such grandeur. While competent accountants are able to render a broad service to their clients as well as audit their accounts, there are definite limitations upon their services as consultants. For example, the fields of production control, engineering and marketing are fields for specialists.

H. W. BORDNER

*Arthur Andersen & Co.*

*Practical Accounting*. Edwin L. Theiss and Jay L. Hunter. (New York and London: McGraw-Hill Book Company, Inc., 1942. Pp. x, 386. $2.25.)

The title to the book, ***Practical Accounting***, is puzzling, for it carries the implication that a considerable body of "impractical" accounting knowledge exists —accounting which cannot be turned to actual use. Such a claim, if made openly, would probably be hotly contested by the accounting profession, for accounting in its very essence is practical. Probably what the authors meant to imply was that their book deals more with the application of accounting than its theory. If so, the title might better have been "Applied Accounting."

The book is an elementary accounting text designed "for a semester's work in a university or college or for a year's work in business and secretarial schools." In thirty-three chapters averaging a little less than ten pages in length, the customary subjects are introduced along with problems and an occasional set of questions. A few additional chapters follow, touching lightly upon partnership accounting, corporation accounting, sales tax, personal records and budgets, and social security tax. The order of presentation is that most commonly found in elementary texts with one noteworthy difference. A relatively elaborate interpretation of a well classified balance sheet and profit-and-loss statement is included at the very start to set forth clearly the objectives of the accounting procedures which are subsequently described.

The purpose of the book, according to its authors, is to provide interesting textual material for beginners in accountancy. To carry out this purpose they present the material as a continuous, engaging story of the formulation, operation, and growth of a retail lumber business. The student is introduced to the financial problems as they arise and shown how accounting technique is applied and adjusted to meet changing requirements. The result is a financial story in which the student acquires a definite personal interest—an interest which carries him through the task of learning accounting procedures with less effort, probably, than would otherwise be necessary. The authors appear to have succeeded in their endeavor to make an interesting text.

They also succeeded in making the book easy to understand. It is written in language suited to the young student. Important points are emphasized again and again in various ways; illustrations are plentiful; almost every chapter ends with a summary outline of significant points in the chapter. The patience and care apparent in developing the ideas throughout much of the book indicate that the authors have had considerable experience with beginning students.

The method of presentation results in some drawbacks. Because of the painstaking simplicity and prolonged explanation, the ideas are introduced rather slowly—perhaps too slowly for university classes. Furthermore, only a single way of

accounting for each kind of financial information is usually given, other possibilities not being mentioned. For example, the purchase and sales journals described cover only purchases and sales on account, with no mention made of possible variations. Again, inventory adjustments are made through the purchases account; a clearing account for cost of goods sold is not described. It appears that completeness has been sacrificed to a considerable degree for simplicity and clarity.

The accountant may find himself disagreeing with some of the theory in the text, as when acquisition of title is made a criterion for an asset. Deferred charges are confused with prepaid expenses, examples of the latter being used to illustrate the former. Vouchers for petty cash are shown as signed by the bookkeeper instead of the one receiving the cash. A credit given a customer to correct an error in addition on a sales invoice is classified as a sales allowance. Other examples might be mentioned.

Occasionally, also, a faulty illustration is used. The totals and balances of accounts as indicated on pages 70–72 would interfere with subsequent postings to accounts and are, therefore, poor illustrations to set before students. A proprietor's capital account on page 134 is ruled off without the balance being brought forward.

On the whole, the book impresses one favorably. The student will find it easier to understand than the average elementary text and he will also discover it to be more interesting. An important use which could be made of the book is to serve as supplementary reading material for poorer students.

Available with the text is a teacher's manual (200 pages, $2.00) giving solutions to the problems and some suggestions for teaching accounting. A sample schedule for one hundred and fifty-three assignments based upon the text is also included.

ARTHUR N. LORIG
*University of Washington*

*Principles of Cost Accounting*. J. F. Sherwood and Franklin T. Chace. (Cincinnati: Southwestern Publishing Company, 1942. Pp. 271. $3.00.)

*Essentials of Cost Accounting*. John G. Blocker. (New York and London: McGraw-Hill Book Company, Inc., 1942. Pp. 430. $3.00.)

In their preface Sherwood and Chace state that *Principles of Cost Accounting* is designed for use in intensive courses. It is one of a considerable number of cost texts introduced in 1942 primarily for use in war training courses, and it will be examined here in light of its usefulness for that purpose.

The text includes ten so-called units or chapters. It is assumed that the authors chose to call them units because some of them contain a variety of subjects such as would not ordinarily be combined in a single chapter.

Unit I is an introduction to cost accounting terminology, manufacturing methods, and cost systems and discussion of departmentalization and perpetual inventories. In general it is an orthodox presentation of introductory cost matters but it is characterized by greater than ordinary readability and brevity which will be welcomed by students in war training courses.

Unit II, concerned with accounting for materials, affords a clear and concise treatment of materials acquisition and handling routines, the problem of costing issues, and accounting procedures. In the discussion of purchasing and receiving, the authors advocate filing vendors' invoices (with the corresponding purchase orders and purchase requisitions) in the purchasing agent's unfilled orders file until ordered materials are received. The text admits

that such procedure might be objected to on the ground that it delays recording liability for invoices as soon as incurred. Perhaps an explanation should have been included of the procedure for taking discounts (available before receipt of materials) under such a filing arrangement.

Discussion of costing issues is not wholly satisfactory since all of the three methods discussed are justified solely on the basis of physical handling of materials. For example, it is stated that the last-in-first-out costing method would be employed where materials are so stored (as in stock-piles) that issues are always from the top of the stock; hence, latest prices should be employed in costing issues because the most recently acquired materials are always issued currently.

The materials discussion is characterized by two weaknesses found in some of the other units in the text: (1) absence of flow charts and (2) a sparsity of illustrative entries. These shortcomings are likely to leave too much to the imagination of the student.

None of the foregoing objections are considered to be critical defects. All can be readily overcome by instructors in their lectures. On the whole the materials unit is a masterful handling in twenty-seven pages of matters which are usually allotted two or three times as much space.

Unit III discusses labor accounting satisfactorily. The treatment is practical and is noteworthy for its timely inclusion of accounting for payroll taxes.

Unit IV is concerned with accounting for factory overhead. The discussion embraces the recording of fixed and variable costs, the distinction between service and producing department burden, distribution of service department costs, and normal (and departmental) burden application rates. The treatment of service department distribution is somewhat light (both as to presentation of possible bases and theory involved) but, in general, the handling of burden accounting is so good as to raise the question, "Where do authors of standard texts in cost accounting manage to waste so many words?"

Unit V is entitled "Application of Principles—Job Cost System." It presents an illustrative job-cost problem from the chart of accounts through entries for a month's transactions and operations, the trial balance, adjustments, and closing entries, to financial and operating statements. Entries, accounts, and statements are discussed and illustrated in detail. This unit should help students to tie together the information garnered from preceding units and it makes up, in large part, for the relative scarcity of illustrative entries noted earlier.

Units VI and VII, devoted to process cost accounting, represent the least abbreviated section of the text. The units include a comparison of process and job-cost accounting for materials, labor, and overhead and they abound in illustrative material. Ten illustrative problems and their solutions are presented to demonstrate clearly the principles involved in various process cost accounting situations. Unit VII concludes with a brief and readily comprehendible discussion of estimating cost accounting.

Unit VIII affords a streamlined version of standard cost accounting. Only one accounting method is presented (costs recorded at actual when incurred and charged into Goods in Process and Finished Goods at standard). Only one end-of-period accounting procedure is presented (controllable variances closed to profit and loss and unavoidable variances prorated among work in process, finished goods, and cost of sales). The unit does not recognize the possibility of variances arising from better-than-standard performance. It is doubtful whether the authors' condensation of this complicated

subject could be improved upon substantially in comparable space.

In Unit IX a miscellany of essential but rather unrelated problems are treated. A good discussion of the factory ledger opens the unit, in which emphasis is happily upon the ledger accounts involved. No space is wasted (as is too often the case) upon supposedly ingenious journals for use with a factory ledger system.

Accounting for scrap and spoilage, for joint- and by-products, and for interest on investment is handled briefly but adequately (for a condensed text). Distribution costs are touched so lightly that the presentation might as well have been omitted. The unit concludes with a timely discussion of government contracts and their accounting significance.

To conclude the text, Unit X presents nineteen problems to supplement those which follow each of the other units. All problems are relatively brief, not too complex, and emphasize effects upon accounts rather than tiresome mechanical accounting procedures.

On the whole *Principles of Cost Accounting* appears to be well suited for intensive cost courses. Because of its brevity it will throw a considerable burden upon instructors, who will be obliged to enlarge upon many phases of the subject. However, it is this writer's own experience in teaching war training cost courses that students of such courses enroll *to be taught rather than to learn*. The instructor must do most of the work. A text such as this, which is brief and easy to read, will have a definite appeal to students of war training classes, who, for the most part, are employed by day and have little energy or enthusiasm for burning midnight oil.

Blocker's *Essentials of Cost Accounting* is an abridged edition of the author's earlier *Cost Accounting*. The latter will be recalled by many in accounting teaching as an impressive tome of some 700-odd pages. In the *Essentials* the author has a text only sixty per cent as large, a condensation achieved principally through omission of various chapters relating to specialized cost techniques.

*Essentials of Cost Accounting* apparently seeks (1) to bid for adoption for one-semester courses in cost accounting and (2) to appeal to instructors of industrial and war training cost courses. Since it is believed that it will be more useful for the first of these purposes, it will be reviewed here chiefly in that connection.

Chapters I and II afford a classic presentation of the need for cost accounting and an introduction to cost accounting terminology. Particularly useful here is a good review of the operation of controlling accounts and their applications in cost accounting.

Chapter III, devoted to the voucher system, might well have been omitted. Most cost accounting students have encountered this material in their introductory accounting. It can be reviewed in classes, if necessary, by assigning such review as supplementary reading.

In the next four chapters materials, labor, and overhead accounting are discussed from a general viewpoint (neither job-cost nor process cost applications are stressed). The treatment of labor and payroll accounting is characterized by the timely inclusion of payroll tax handling. It is the feeling of this reviewer that the author's discussion of wage systems could well be left to a course in industrial management, but it is recognized that there is sufficient precedent in other cost texts for its inclusion.

Chapter VIII is concerned with budgeting technique and procedure and is a section which one can be happy was not omitted in the author's condensation. This well handled discussion will provide for many students their only acquaintance with the subject.

Job-order costs are presented in Chapters IX to XII, inclusive. Materials, labor, and overhead accounting are again discussed in light of their job-cost applications. There is some repetition of subject matter of earlier chapters but such repetition is highly desirable and difficult to overdo in cost courses.

Process cost accounting is treated in Chapters XIII and XIV. The discussion is distinctive for the simplicity of the author's version of a process cost statement. In it the author has made his titles brief yet descriptive and has eliminated considerable detail—in contrast to the usual complicated forms. The author tends to over-simplify the problem of evaluating ending inventories in process in stating that work can be so scheduled as to be complete in each of the various processes at the close of an accounting period.

Chapter XV adequately discusses joint and by-product costs but is somewhat light with respect to illustrative entries.

A very readable treatment of standard costs is afforded in Chapters XVI and XVII. The material on determination of standards is particularly good for its concrete discussion of building up the standard cost of a specific product. The treatment of accounting for standards is judiciously restricted to a discussion of only two methods (additional methods tend to contribute more confusion than clarification) and is accompanied by diagrams illustrating the flow of costs under the two methods. Also of interest is the discussion of disposition of variances which is somewhat more complete than usual.

The closing chapters, XVIII to XX, are devoted to cost accounting for selling and administrative expenses. Included is a useful though brief discussion of the Robinson-Patman Act and its significance to cost accounting. Likewise of value are the numerous suggested bases for distributing various selling and administrative costs and some excellent charts illustrating the relationships of controlling accounts and subsidiaries in accounting for distribution costs. An unusual and worthwhile feature is the discussion, in Chapter XIX, of standard distribution costs.

The problems which follow the chapters in the text are quite satisfactory. While the real test of accounting problems is to solve them, from mere examination those in this text appear to be relatively easy to understand, not too long, and sufficiently numerous to afford instructors some variety in assignments from semester to semester.

In general Professor Blocker has produced in *Essentials of Cost Accounting* a wieldy, well-balanced text for a one-semester course which will probably gain wider acceptance than his earlier, larger volume. It is this reviewer's feeling that it frequently employs words where charts or entries would better tell the story and is in some places too abstract where concrete problems or situations would improve learning. These are, however, common characteristics of standard texts on cost accounting—probably even of most texts on business subjects.

The *Essentials* will doubtless be of interest to those instructors of war training courses who prefer to employ a "full-sized" text rather than one of the extremely condensed versions.

Richard E. Strahlem
*Purdue University*

# ASSOCIATION NOTES

Robert L. Dixon

ELECTION OF OFFICERS

On December 15, business reply postal cards were sent to all members, requesting a vote on the following question:

"In the absence of an annual meeting in 1942 are you willing to empower a committee, appointed by the President, consisting of Past Presidents of the American Accounting Association, to make a final selection of officers for the year 1943?

By January 6, replies had been received from 698 members with 691 voting "yes" and 7 voting "no." On the basis of the preponderant affirmative vote, President Taggart appointed a committee consisting of Past Presidents: Paton (Chairman), Chamberlain, Elwell, Greer, Himmelblau, Scovill and Winter. The new officers selected by the committee will be announced in the April issue of the Accounting Review.

NEW MEMBERS

The following have become regular members of the Association since October 1, 1942:

| *Name* | *Professional Connection* | *Nominated By* |
|---|---|---|
| Parry Barnes | Lunsford, Barnes & Co. | S. Marsh |
| W. H. Bohn | Wayne University | G. R. Husband |
| J. E. Borendame, Jr. | U. S. Naval Intelligence | R. L. Dixon |
| G. A. Brennan | | R. L. Dixon |
| C. C. Brown | Industrial Rayon Corp. | R. F. Knittel |
| A. B. Carson | University of Nebraska | O. R. Martin |
| M. A. Cogburn | Peat, Marwick, Mitchell & Co. | M. W. Strain |
| N. D. Durst | A & M College of Texas | T. W. Leland |
| R. A. Harold | Public accountant | S. P. Garner |
| E. E. Hines | Wynne-Knox Candy Co., Inc. | S. P. Garner |
| A. S. Hulsart | Local Government | R. L. Dixon |
| J. H. Lehmann | Public Accountant | S. P. Garner |
| G. W. McCulley | Texas College of Arts and Industries | R. L. Dixon |
| E. G. Maihack | Public Accountant | R. L. Dixon |
| S. Marks | Public Accountant | R. L. Dixon |
| H. L. Morris | University of Colorado | G. G. Fullerton |
| B. Muchnik | Ajax Wastepaper Co. | R. L. Dixon |
| M. P. Newby | Skelly Oil Co. | S. Marsh |
| J. D. Peoples | | R. L. Dixon |
| M. C. Rense | Ohio State University | R. S. Willcox |
| J. W. Schlosser | George S. Mepham, Corp. | J. J. Lang |
| R. Rives | Private Secretary | O. Lopex-Hidalgo |
| E. M. Sowell | Stephen F. Austin State Teachers' College | J. A. White |
| P. L. Starbuck | University of Chicago | W. J. Graham |
| R. W. Taylor | University of Cincinnati | N. C. Geis |
| K. W. Thompson | Kroger Grocery & Baking Co. | N. C. Geis |
| E. D. Trembly | University of Toledo | C. F. Dunham |
| F. E. Turner | Birmingham Electric Co. | S. P. Garner |
| W. A. Ullrich | Private practice | H. F. Taggart |
| L. J. Van Herpe | Office of Price Administration | M. L. Black, Jr. |
| L. C. Van Laar | Public Accountant | R. L. Dixon |
| R. H. Van Voorhis | Duke University | M. L. Black, Jr. |
| W. J. White | Office of Price Administration | M. L. Black, Jr. |

PERSONAL NOTES

*Andrew Barr* (Securities Exchange Commission) is now a Lieutenant Colonel in the United States Army. He may be addressed: GSC, G2 Division Headquarters, APO 253, Camp Pickett, Virginia.

*Russell Bowers* has been appointed Assistant Professor of Management Engineering at the Carnegie Institue of Technology. He has charge of the courses in accounting in the absence of Raymond W. Coleman who is on leave of absence to serve as Director of the Army flying field at La Junta, Colorado.

The Catholic University of America is now offering graduate work in accounting leading to the M.A. degree. The members of the teaching staff are Henry W. Sweeney, James E. Gillis, Charles T. Sweeney and Paul J. Fitz Patrick, Chairman.

*Lauren F. Brush* has been appointed Instructor of Accounting at Louisiana State University.

*William F. Crum* (University of Wichita) is now a Second Lieutenant in the Ordnance Division of the United States Army, located at Ft. Bliss, Texas.

*Edward G. Eriksen* (Wayne University) has enlisted in the United States Naval Reserve. He is an Assistant Paymaster with the rank of Lieutenant and is located at Philadelphia.

*George J. Heideman* is now a Lieutenant (jg) in the United States Naval Reserve. He is located at the United States Naval Ordnance Plant, Canton, Ohio.

*Eric L. Kohler* (Editor of the ACCOUNTING REVIEW, and formerly Comptroller of the Tennessee Valley Authority) has been appointed Executive Officer of the Petroleum Administration for War.

*Chester F. Lay* (University of Texas) organized and served as Chairman of an Accounting Employers Round Table at the Fourth Texas Personnel Conference at the University of Texas. Participating were the Texas Society of C.P.A.'s, State Selective Service officers, and teachers.

*R. M. Mikesell* (Indiana University) has been commissioned a Captain in the Army. His address is: APO 915, c/o Postmaster, San Francisco, Calif.

*William R. Matthies* is now Assistant Professor of Accounting and in charge of the accounting courses at the University of Idaho.

*Frank P. Smith* (University of Rochester) is on leave of absence to serve as Chief Accountant for the Office of Price Administration in Washington, D. C.

*Richard H. Strahlem* (Purdue University) has been appointed Assistant Professor of Accounting. He is the author of *Accounting Fundamentals* published by Ronald Press in 1942.

*Fladger F. Tannery* has been commissioned to the rank of Captain in the Army Air Corps. He has been assigned as Chief of the Budget and Fiscal Section in the Office of Assistant Chief of Staff for Management Control.

*Harry H. Wade* (University of Iowa) has been granted a leave of absence from duties as Associate Professor of Accounting to accept a commission as Captain in the Coast Artillery.

*Robert E. Walden* (Indiana University) is on leave for the present semester and is working with Haskins & Sells. He is located in the Los Angeles office.